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Technical Report

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PREFACE

This report of the 2002 Youth Smoking Survey provides national and provincial results of this important Canada-wide survey based on over 19,000 questionnaires completed by young Canadians in grades 5-9 and interviews with almost 18,000 of their parents. It complements and builds from the 1994 Youth Smoking Survey Technical Report. It describes smoking practices and related knowledge, beliefs, and attitudes as well as social influences, restrictions on smoking and reports on drug and alcohol use.

This report presents findings for every major topic covered in the survey, and, for most chapters, provides detailed findings classified by grade, sex and province of residence. The report is considered "technical" only because of this level of detail, not because of any requirement for statistical sophistication to read it. Indeed, the intended readership consists primarily of individuals in public, voluntary, and private agencies which are responsible for developing policies and programs to combat youth smoking. Epidemiologists and other researchers may find many issues in this report worthy of further examination. Survey data in electronic form are available for this purpose from Statistics Canada or their Regional Data Centres.

This report is available on the internet at http://www.gosmokefree.ca.

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Last but not least, readers of this report are indebted to the 19,018 young Canadians who completed the questionnaires and 17,709 parents who completed the interviews and to their teachers and school administrators who demonstrated their interest in youth health by their generous cooperation with project staff.

DISCLAIMER

This report was written by many researchers across Canada from a variety of agencies and backgrounds, united by an interest in and a concern about youth smoking and youth use of drugs and alcohol. The opinions expressed in the chapters, found primarily in the Discussion sections of each chapter, are those of the authors and are not necessarily endorsed by Health Canada or the employers of the authors.

NOTES ON THE TABLES AND FIGURES

Symbols

*	Moderate sampling variability (CV between 16.5% and 33.3%); interpret with caution.
#	Data suppressed due to high sampling variability (CV>33.3% or sample size less than 30)
-	Data not available.

See chapter 2 for a more complete explanation.

Table Numbering

Tables designated by a letter appear in the text on the same page or immediately following the reference to them. Tables designated by a number are more detailed and follow the chapter.

Table Entries

Except for the population estimate, which is in thousands ('000), most table entries are percentages that add up to 100% across the rows. However, since whole numbers are presented, some rounding error may occur, and totals may not equal 100% exactly. All entries are weighted to reflect the estimated distribution among the entire Canadian population of youth in grades 5-9.

Statistical Significance

Differences highlighted in the text are statistically significant at the 5% level. Chapter 2 explains this testing in further detail and provides tables that the reader can use for testing of differences between population subgroups.

CHAPTER 1 - INTRODUCTION

Steve R. Manske, EdD
Centre for Behavioural Research & Program Evaluation
University of Waterloo

Sarah J. Robinson, BKin
Department of Health Studies & Gerontology
University of Waterloo

Alan Diener, PhD
Tobacco Control Programme
Health Canada

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SURVEY BACKGROUND & OBJECTIVES

Context of the 2002 Youth Smoking Survey

Tobacco use is Canada's number one preventable cause of premature death. In the year 1998, it is estimated that the deaths of 47,581 Canadians were attributable to the use of tobacco industry products[1].

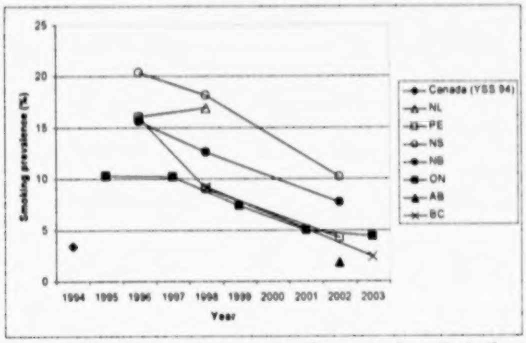
The 2002 Youth Smoking Survey (YSS) concerns youth in grades 5-9 (roughly ages 10-14), the population most likely to first try or experiment with smoking. Since the 1994 YSS, we have not had a representative, in-depth picture of smoking among these young Canadians. This report updates the groundbreaking findings of the 1994 report[2] and provides insights in additional areas of interest. It focuses exclusively on the youngest cohort reached through school-based surveillance to date. The 1994 YSS also included a phone-based survey of youth aged 15-19. This age group is now captured in the Canadian Tobacco Use Monitoring Survey (CTUMS), which has been conducted annually since 1999[3]. Thus, these youth were not included in the 2002 YSS.

While selected provinces (most notably Ontario) have studied tobacco use among youth in grades 5-9 over a number of years, and others have more recently added periodic surveys (e.g., Atlantic provinces, Alberta, British Columbia), no nationally representative sample of these youth has been surveyed since 1994 (Table1-1). Information about youth in higher grades is somewhat better (Table 1-2), since 15-19 year olds (approximately equivalent to grades 10-13) are sampled in CTUMS. Dramatic shifts in tobacco use have occurred in older adolescent groups[3] and adults[3]. Such shifts may also have occurred among youth in grades 5-9. It is important that planning and evaluation processes are informed by up-to-date data for these youth as well.

Historically, smoking prevalence among grades 5-9 students has remained at low absolute levels in comparison to other ages. Figures 1-A and 1-B display findings for grades 7 and 9 respectively, starting with the 1994 YSS data. In 1994, 7% of the Canadian population in grades 7 and 9 self-reported as current smokers (using a definition of having smoked at least one cigarette in the past 7 days recalculated based on 1994 YSS Technical Report[3] data). Note that provincial data reported in Figures 1-A and 1-B use less stringent definitions of smoking.

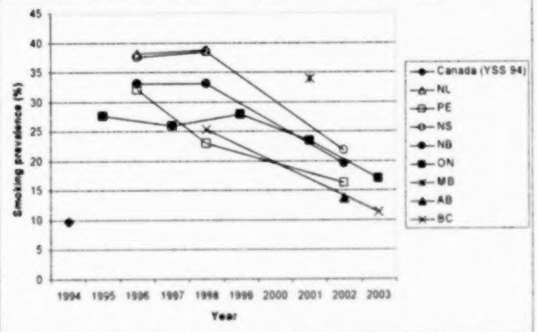
A comparison of the YSS 1994 rates shown in Figures 1-A and 1-B, reveals the dramatic jump in current smoking rates between students in grades 7 and 9. This jump is also consistently reflected in provincial data reported in Figures 1-A and 1-B. Similar findings hold for males and females. Since 1994, smoking rates in both grade 7 and 9 students declined as illustrated by the provincial rates reported in Figures 1-A and 1-B.

Figure 1-A
Smoking Prevalence* by Province, Grade 7, Canada, 1994-2002



*Note: Current smoking was defined as smoking greater than one cigarette in the past 12 months with two exceptions: (1) Canadian YSS 1994 data where current smoking included daily smokers and smoking in the past week; and, (2) BC data where current smoking was defined as smoking in the past 30 days.

Figure 1-B
Smoking Prevalence* by Province, Grade 9, Canada, 1994-2002



*Note: Current smoking was defined as smoking greater than one cigarette in the past 12 months with two exceptions: (1) Canadian YSS 1994 data where current smoking included daily smokers and smoking in the past week; and, (2) BC data where current smoking was defined as smoking in the past 30 days.

For the next oldest age grouping (approximately grades 10-12), the rapid rise in smoking continues. In 2003, national data indicate 13% of males and17% of females aged 15-17 years were current smokers (defined as answering "yes" to "At the present time do you smoke cigarettes every day or occasionally?")^3.

These rates increased further to 24% of males and 25% of females aged 18-19 years [3]. Similar increases were observed in 2002 data from the United States, where smoking rates rose steadily in high school to peak in twelfth grade students at 26%[4]. The approximately quadrupling of smoking rates in the 10-year age span is a deep cause for concern. We need ongoing surveillance of smoking rates and related behaviours, attitudes and influences that may contribute to or stem these increases as the cohort ages. This information, in turn, may assist the development of policies and programs to help reduce the impact of smoking on the health of Canadians.

Age of smoking onset is another indicator of the need for surveillance in the youngest age group. The 2003 CTUMS data indicate that more than half (56%) of respondents age 15 and older had their first cigarette by age 15[2]. Age of onset was consistent across genders. The 1994 YSS reported that the greatest relative increase (300%) in beginning smoking was between 10 and 12 years of age (with an increase in the prevalence rate from 2% to 8%)[2]. Even modest increases in prevalence rates represent large numbers of youth nationally.

To fully understand the impact of youth smoking, we need to translate youth smoking rates into health and economic costs. The majority of these costs are delayed 20+ years from smoking onset, so looking only at the impact on youth is not fully informative. The most recent data suggest that the direct health care costs attributable to smoking among all ages in Canada amounted to $2.4 billion in 1996[5]. Table 1-A partials out these costs for the years 1991 and 1996 and reveals the need for up-to-date and projected costs. While taxes resulting from cigarette sales contributed about $2.1 billion in excise duties and excise taxes to the economy in 1996[6], total direct (e.g., time in hospital) and indirect (e.g., lost productivity) costs attributable to tobacco smoke far exceeded this figure, amounting to $15.2 billion in that year. Using more stringent assumptions Single and colleagues estimated costs attributable to tobacco smoke were $9.6 billion in 1992[7]. As reported in the YSS Technical Report 1994, these smoking-attributable costs have continued to rise steadily since 1966. Due to the lag period of much smoking-attributable illness and mortality, these figures will remain high for several years and will not drop without significant and sustained efforts to reduce the number of smokers in Canada.

Table 1-A
Smoking Attributable Economic Costs, Canada, 1991 and 1996

Cost Item	Cost in 1991 (in $ Billion)[7]	Cost in 1996 (in $Billion)[8]
Direct Costs		
Health Care	2.5	2.4
Residential Care	1.5	(not available)
Workers' Absenteeism	2.0	2.2
Fires	0.8	(not available)
Indirect Costs		
Lost Future Income Due to Premature Death	10.5	11.3
Adjustments for Future Costs (if Smokers Had Not Died)	-1.5	-0.7
Total Costs	$15.8	$15.2

The Canadian response to the health crisis posed by the use of tobacco products has grown with time. Built on both Canadian experience and successful interventions elsewhere, this response has incorporated a comprehensive approach. The technical report for the 1994 Youth Smoking Survey[2] indicated:

> Prevention, cessation, and protection are the three pillars of Canada's national anti-tobacco strategy. First articulated in the 1987 *Directional Paper of the National Program to Reduce Tobacco Use in Canada*[8] these three objectives were reiterated in the update of the *National Strategy to Reduce Tobacco Use* in 1993[9] and the *Tobacco Demand Reduction Strategy* of 1994[10]. Protection and cessation are the focus of *Tobacco Control, A Blueprint to Protect the Health of Canadians*, released by Health Canada in late 1995[11]. The strategies and tactics outlined in these documents make it clear that prevention, protection, and cessation are mutually reinforcing. Prevention and cessation both serve to reduce smoking and thus environmental tobacco smoke, while protection measures promote cessation by removing opportunities to smoke. Protective measures also reinforce prevention efforts by reducing the modeling of smoking as a normal and desirable behaviour.

To the above objectives, for the new millennium, the federal strategy[12] added harm reduction. Harm reduction refers to efforts to regulate products in such a way as to reduce the risk from tobacco use. Further, the National Tobacco Control Strategy[13] endorsed by the federal and provincial/territorial governments and non-governmental organizations, has identified tobacco industry denormalization, as an important objective.

Also complementary to the above strategies, 9 of 10 provinces and 2 of 3 territories have identified provincial / territorial strategies for tobacco control[1]. Despite these efforts, Table 1-B indicates that per capita expenditures fall far below those recommended by the Centers for Disease Control (CDC) in the United States to implement evidence-based best practices in state tobacco control. These estimates range from US$7 to $20 per capita [approximately $8.75-$25 Canadian) in states with population under 3 million, to US$5 to $16 per capita (approximately $6.25-$20 Canadian) in states with population over 7 million)[14]. Canada's average expenditure (CAN$1.79) lags far behind the US average and even farther behind CDC's recommended per capita expenditures. On the other hand, jurisdictions like California have made substantive inroads into tobacco use reduction with funding that exceeds the Canadian average, but does not reach CDC's recommended level. Canadian jurisdictions should monitor costs and outcomes to assess the value they for resources invested.

Table 1-B
Per Capita Funding for Tobacco-Control (2002-2003) by Territories, Provinces in Canada and Selected US States[15]

Select Jurisdictions	Population	2002-2003 Funding (CDN$)	Per Capita Spending (CDN$)
CANADA	**30,454,994**	**54,595,815**	**1.79**
NT	41,186	317,815	7.72
NU	28,300	150,000	5.30
AB	3,086,034	11,700,000	3.79
QC	7,435,504	20,000,000	2.69
NS	943,756	1,600,000	1.70
ON	11,964,104	19,000,000	1.59
BC	4,120,891	4,400,000	1.07
PE	139,330	114,000	0.72
SK	1,014,403	584,000	0.58
MB	1,148,181	668,000	0.52
NL	533,305	250,000	0.47
NB	729,498	Unknown	Unknown
YK	28,674	Unknown	Unknown
United States (all)	**284,796,887**	**1,190,707,200**	**4.18**
Maine	1,286,670	21,333,504	16.58
Mississippi	2,858,029	31,008,000	10.85
Minnesota	4,972,294	44,806,560	9.01
California	34,501,130	208,590,816	6.05
Maryland	5,375,156	31,085,520	5.78

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[1] Provincial Tobacco Control Strategies: British Columbia Tobacco Strategy, Alberta Tobacco Reduction Strategy, Manitoba Provincial Tobacco Control Strategy, Ontario Tobacco Strategy, Plan Québécois de Lutte Contre le Tabagisme, New Brunswick Tobacco Strategy, Prince Edward Island Strategy for Healthy Living, Nova Scotia Comprehensive Tobacco Strategy, Newfoundland ACT Tobacco Reduction Strategy, Yukon Tobacco Reduction Strategy, Northwest Territories Action on Tobacco

Objectives of the YSS

To pursue the multiple objectives of tobacco control effectively, comprehensive data are needed on behaviour, attitudes, beliefs, knowledge, and social influences. These data are needed not only for the population as a whole, but also for particular subsets, most notably youth. The YSS is the best source yet of such data at a national level, and this report of the 2002 YSS survey updates findings from the previous 1994 survey.

The 2002 YSS builds upon the objectives of the earlier YSS, and thus are largely consistent with those detailed in the 1994 YSS technical report. Specifically, the 2002 YSS was:

- to update the 1994 survey and provide a current national picture of youth smoking behaviour for students in grades 5-9;
- to provide insights into the regulatory, educational, and social influences[2] that youth face in deciding whether or not to experiment with or take up smoking, continue with the habit, or stop smoking;
- to establish a resource for making sound, evidence-based decisions on federal and provincial policies and programs to control tobacco use among Canada's youth; and,
- ultimately, to contribute to Canada's tobacco control monitoring systems.

In addition, 2002 YSS objectives were enhanced to gain perspective in the following areas:

- students' experiences with alcohol and drug use in grades 7-9;
- the impact of health practitioners (doctors and dentists) on smoking behaviour;
- other potential correlates of smoking (e.g., physical activity, reading, recreation and self image).

Overview of the YSS Content

Table 1-C summarizes the topics covered in the 2002 YSS compared to those covered in the 1994 survey.

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[2] While the 1994 YSS examined commercial influences [i.e., advertising and sponsorship] as part of social influences, the 2002 YSS did not.

Table 1-C
2002 & 1994 YSS Questionnaire Content

Questionnaire Content	YSS 2002	YSS 1994
Student Questionnaire		
Smoking Prevalence	✓	✓
Smoking Behaviour, Other Forms of Tobacco Use, Attempts to Quit	✓	✓
Social and Demographic Factors (Influence of Family, Friends, Teachers)	✓	✓
Acquisition of Cigarettes	✓	✓
Impact Of Policies (In School and at Work)	✓	✓ (School Only)
Education (At School, Pack Warnings)	✓	✓
Attitudes and Beliefs About Smoking	✓	✓
Awareness of Health Effects of Smoking	✓	✓
Youth Funds Available for Purchasing	✓	✓
Tobacco Marketing Influences	✓	✓
Experience with Alcohol and Other Drugs*	✓	
Influence of Health Practitioners	✓	
Physical Activity, Reading, Recreation, Self Image	✓	
Parent Interview		
Household Composition	✓	✓
Demographics		
Education	✓	
Occupation	✓	✓
Income	✓	
Child Access to Health Services (Family Doctor, Dentist)	✓	
Smoking Restrictions in The Home	✓	
Smoking Prevalence in The Home	✓	

* These items were surveyed in grades 7-9 only.

To protect the confidentiality of proprietary business information, brand preference was not included in the file provided by Statistics Canada. It was replaced by derived information on cigarette strength and tar levels.

Uses of the YSS Data

While the data collected for the YSS suit many purposes, they are primarily intended to facilitate the planning and monitoring of tobacco control policies and programs. Given the age group surveyed and national scope of the sample, the YSS is best suited to the prevention focus of the *Federal Tobacco Control Strategy* [12] and the *National Tobacco Control Strategy*[13]. To a lesser extent, analysis of questions in the survey also contributes to understanding of progress toward cessation, protection, harm reduction (Federal Strategy), and tobacco industry denormalization (National Strategy) objectives. In general, surveillance needs for older age groups, including older youth, are well served by the Canadian Tobacco Use Monitoring Survey (CTUMS)[3], the Canadian Community Health Survey (CCHS)[16] and other data collection systems (e.g., School Smoking Profile[17]. However, Canada lacks current, nationally based trend data for tobacco use in youth in grades 5-9[3], encompassing the age group marked by the onset of tobacco use[2]. The 2002 YSS remedies this deficiency. The survey complements behavioural data with items tapping a variety of influences on smoking among students in grades 5-9. Analyses of these data will permit policy-relevant interpretation in the areas of education and health promotion, restrictions on public smoking, and denormalization of the tobacco industry. Finally, the addition of items tapping non-medical substance use in the 2002 YSS will facilitate the linkage of tobacco policy to policy in other areas of health protection and promotion. Chapters 3-12 are organised to improve understanding of this wide range of domains.

In addition to the policy driven uses of YSS data, the 2002 survey may facilitate further research in youth smoking. Unfortunately, this did not happen with the 1994 YSS data. A search of the Medline database from 1996-2004 did not find any reports analysing these data, in spite of their rich potential. The consistency of 2002 YSS items with those in the 1994 survey, and the comparable (large) sample size should make further research using these data more appealing to the research community. Large samples are required especially when behaviours are relatively infrequent, as is the case with many topics relevant to the grades surveyed with the YSS.

Overview of YSS Methods

The 2002 YSS was a two-stage stratified clustered design with schools as the primary sampling units and classes as the secondary units. Within each province, each school containing students in grades 5-9 was placed in one of two strata depending on whether the school was located in a Census Metropolitan Area[4] or not, with an additional stratum in Quebec and Ontario for Montreal and Toronto. Within each stratum, for each of grades 5-9, schools were selected with probability proportional to their size. Then from the selected schools, field personnel selected one eligible class at random from those in the school at the designated grade.

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[3] This report will refer to the sample by the conventional grade system 5-9. Please note grades 5, 6, 7, 8, and 9 coincide with the Quebec grades Cycle 3-1, Cycle 3-2, Secondaire I, Secondaire II and Secondaire III respectively.

[4] A Census Metropolitan Area is an area consisting of one or more adjacent municipalities situated around a major urban core that must have a population of at least 100,000.

The 2002 YSS was administered to students within selected classes and was supplemented by telephone interviews with parents. Although the basic function of the 2002 parent's questionnaire remained the same as it was in 1994 (i.e., the collection of socio-economic information about the child's family), the content was significantly augmented. Both the students' and parents' surveys were conducted under the voluntary provisions of the Statistics Act[18].

Sufficient response rates were acquired for the targeted population. The student response rate was 82%, comprising 19,018 usable questionnaires. These questionnaires were used to provide estimates for the 2,027,506 students in the target population (grades 5-9). The number of responses was large enough to perform detailed analysis. This allows reliable provincial estimates to be available for many variables, an important consideration because the provinces have major responsibility for tobacco control in their populations and complete jurisdiction over activities in schools.

Statistics Canada was responsible for the sample design, data collection, and data processing. It collaborated with Health Canada on questionnaire design. The school questionnaire and the parent questionnaire were both developed through feasibility studies, pilot tests, and qualitative testing, including a series of in-depth interviews with children in grades 5-9.

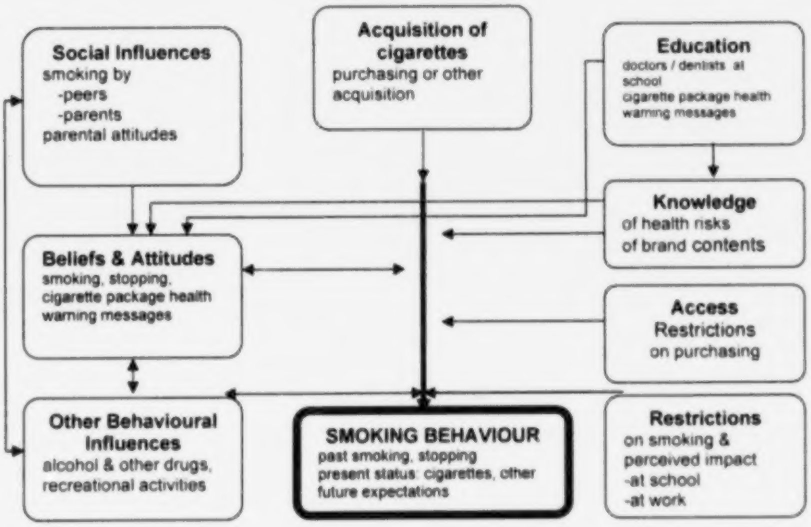
ORGANIZATION OF THE REPORT

Conceptual Framework of the Analysis

Figure 1-C displays a simplified model that guided development of the questionnaire and this report. Consistent with the 1994 survey, the principles used to guide efforts are consistent with a *social-cognitive* approach to explaining behaviour[19] along with the *policy context*. Potential relationships between content areas are also suggested in Figure 1-C.

Foundational to the YSS is its assessment of past and current *smoking behaviour*, and expectations about future *smoking behaviour*, found at the bottom of Figure 1-C. The survey details current smoking behaviour, permitting distinctions at several levels of smoking behaviour appropriate to youth including youth with no smoking experience (Never Smoker who has Never Seriously Thought About Smoking, Never Smoker who has Seriously Thought About Smoking) and those with smoking experience (Puffer, Smoked Beyond Puffing, Not Daily Smoker, Daily Smoker). The survey also permits less-detailed descriptions of *past behaviour* (e.g., age of initiation for smokers and age of any attempts to stop) and *future behaviour* (e.g., expectations in one year, experimentation within a month for persons not currently smoking). The boxes surrounding the smoking behaviour box identify potential influences. These include items concerned with *acquisition of cigarettes* and restrictions on smoking in schools and the home, which could inform potential policy and program initiatives around the availability of cigarettes and the curtailment of where smoking is allowed. Added for 2002 are items that describe *other behavioural influences* (alcohol and non-medical drug use, recreational activities). The survey also explores selected psychosocial and educational influences that might influence decisions to experiment, start, continue, abstain, or stop smoking. These take the form of intra-personal factors, such as *knowledge, beliefs,* and *attitudes* about smoking. Inter-personal or *social influences* explored include the behaviours of parents and close friends and attitudes of parents. The influence of these social models surrounding youth may be moderated by *educational* influences. For instance, the survey explores the use of and support from health professionals (doctors and dentists). Respondents describe school lessons on tobacco use and awareness of cigarette pack warnings. Each of these topics may influence decisions to start, continue or stop smoking.

Figure 1-C
Smoking Behaviour and Social-Cognitive-Policy Influences Covered in YSS 2002


Social Influences
smoking by
-peers
-parents
parental attitudes
Acquisition of cigarettes
purchasing or other acquisition
Education
doctors / dentists at school
cigarette package health warning messages
Knowledge
of health risks
of brand contents
Beliefs & Attitudes
smoking, stopping,
cigarette package health warning messages
Access
Restrictions
on purchasing
Other Behavioural Influences
alcohol & other drugs,
recreational activities
SMOKING BEHAVIOUR
past smoking, stopping
present status: cigarettes, other
future expectations
Restrictions
on smoking &
perceived impact
-at school
-at work

Format of the Report

The structure of this report is outlined in accordance with the conceptual framework, illustrated in Figure 1-C.

Chapter 2 provides details of survey methods including survey design, sample design, data collection, and analyses. Following this, smoking behaviour is described in Chapters 3 and 4. Chapter 3 provides prevalence data on types of smoking, as well as detail on such behaviours as inhaling, use of smokeless forms of tobacco, age of initiation, and expectations of future behaviour. Chapter 4 is devoted to the topic of stopping smoking, an important issue even among this young population.

Chapters 5 through 10 describe influences on smoking and the acquisition of cigarettes – factors that may either positively or negatively influence the development of smoking or lifelong abstinence.

Social influences originating from peers and parents are the topic of Chapter 5, while Chapter 6 looks at the perceived impact of heath practitioners, specifically doctors and dentists, on smoking behaviour (a topic that is novel to the 2002 YSS). Chapter 7 deals with more cognitive and value-laden influences – beliefs and attitudes about smoking, cigarette package health warning messages, health issues, and the reasons why smokers start. These three chapters are highly relevant to strategies focused on prevention.

Chapter 8 discusses knowledge of health problems and cigarette package health warning messages, the smoker's awareness of the contents of his or her own brand, and whether he or she learned in school about the dangers of smoking. The results of this chapter are important for those who design and deliver prevention-oriented programs, especially health education messages, as well as those whose focus is on protective legislation and regulation.

Chapter 9 examines many aspects of cigarette access that are relevant to tobacco control: usual source of cigarettes, attempts and strategies to purchase cigarettes, and usual brand. Most of these topics are directly relevant to objectives set out in the *Federal and National Tobacco Control Strategies*.

Regulatory restrictions on smoking are the subject of Chapter 10. This chapter describes the existence of restrictions on smoking in schools and whether these restrictions have had, or would have, the desired impact on youth smoking. Data are also presented on knowledge of the minimum age to purchase cigarettes. All of these topics are relevant to the *Federal and National Tobacco Control Strategies* and to the objectives of prevention, protection, cessation, harm reduction, and tobacco industry denormalization.

Insight into additional unhealthy behaviours of students is depicted in Chapter 11, including utilization rates of alcohol and drugs for non-medicinal purposes. The content of this chapter is another new component in the 2002 YSS, enabling the relationships among various risk behaviours to be better understood.

Chapter 12 deals with international comparisons of tobacco use and is a new chapter for the 2002 report. Comparison of the progress of Canada and other countries in youth tobacco control may facilitate identification of effective strategies.

Chapter 13 concludes the report with a synthesis of the findings reported in Chapters 3 through 12, and a discussion of the implications of findings, particularly with regard to tobacco control programs and policies.

Format of Chapters 3-12

The ten chapters that present the findings of the 2002 YSS share a common format. Each chapter begins with highlights of its findings, and a description of the methods specific to the chapter. Then, the findings are presented and described using text, tables and figures. Next, the findings are interpreted with reference to any methodological issues and data from other sources. Each chapter concludes with a discussion of policy and program implications of the findings and the identification of unanswered questions that should be addressed in further analysis.

Detailed tables follow each chapter, while summary figures and text tables appear within each chapter. As described in detail in Chapter 2, commonly accepted standards are used for qualifying the data appearing in tables and figures and for testing the significance of differences noted in the text.

Taken together, the chapters in this technical report issue a challenge to tobacco control stakeholders. The enhanced understanding of patterns of tobacco use and related behaviours and correlates offers an opportunity for evidence-based planning of policy and practice in tobacco control. The simple tabulations described suggest opportunities for more complex statistical controls in further research using the data. Difficulties accessing the 1994 data may account for the dearth of reports utilizing that survey. Statistics Canada has now made both the 1994 and 2002 datasets available through Regional Data Centres, thus markedly improving access. The authors of the current report trust that their efforts in this volume will signal the start of considerable activity to utilize the data effectively for further action to reduce the health burden caused by the use of tobacco industry products in Canada. We hope that the next Youth Smoking Survey will reflect further decreases in youth tobacco use as a result of these actions.

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Table 1-1
Health Behaviour Surveys, Grades 5-9[5], Canada

SURVEY		YEAR									
		1994	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**
School-Based	Youth Smoking Survey[2]	T								T,A,O, G	
	Ontario Student Drug Use Survey[20]		T,A,O		T,A,O		T,A,O		T,A,O		T,A,O
	Alberta Youth Experience Survey (TAYES)[21]									T,A,O	T,A,O
	British Columbia Adolescent Health Survey[22]					T,A,O, G					T,A,O, G
	Manitoba Addictions Foundation High School Survey[23]								T,A,O		
	Quebec Survey of Tobacco Use in High School Students[24]					T		T,A,O		T,A,O	
	Atlantic Provinces Student Drug Use Survey[25-27]			T,A,O, G					T,A,O, G		
	Yukon A Cappella North 2 (ACN2)[28]								T,A,O		
House-hold Based	National Population Health Survey (age 12+)[29,30]	T,A,G		T,A,G		T,A,G		T,A,G		T,A,G	
	National Longitudinal Survey of Children & Youth[31]	T,A,O, G		T,A,O, G		T,A,O, G		T,A,O, G		T,A,O, G	
	Canadian Community Health Survey (age 12+)[16]								T,A,O, G		T,A,O, G

T= Tobacco A= Alcohol O= Other Drugs G= General Health

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[5] Non school-based surveys did not sample grades, and not all grades were sampled in all surveys

Table 1-2
Health Behaviour Surveys, Grades 10-12[6], Canada

SURVEY		YEAR									
		1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
School-Based	Ontario Student Drug Use Survey [20]		T,A,O		T,A,O		T,A,O		T,A,O		T,A,O
	Alberta Youth Experience Survey (TAYES) [21]									T,A,O	
	British Columbia Adolescent Health Survey [22]					T,A,O G					T,A,O G
	Manitoba Addictions Foundation High School Survey [23]								T,A,O		
	Quebec Survey of Tobacco Use in High School Students[24]					T		T,A,O		T,A,O	
	Atlantic Provinces Student Drug Use Survey[25-27]			T,A,O G					T,A,O G		
	1996 NWT Alcohol & Drug Survey[32]			T,A,O G							
	Yukon A Cappella North 2 (ACN2) [28]								T,A,O		
House-hold Based	Youth Smoking Survey[2]	T									
	Canada's Alcohol & Other Drugs Survey[33]	T,A,O									
	Canadian Tobacco Use Monitoring Survey(3)						T	T	T	T	T
	Survey on Smoking in Canada[34]	T									

T= Tobacco A= Alcohol O= Other Drugs G= General Health

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[6] Non school- based surveys did not sample grades, and not all grades were sampled in all surveys; Ontario included Grade 13, until 2001, when that grade was eliminated in the province.

CHAPTER 2 - SURVEY METHODS

K. Stephen Brown, PhD
Department of Statistics and Actuarial Science &
Health Behaviour Research Group
University of Waterloo

Alan Diener, PhD
Office of Research, Surveillance and Evaluation
Tobacco Control Programme
Health Canada

Rashid Ahmed, MSc
Health Behaviour Research Group
University of Waterloo

David Hammond, MSc
Department of Psychology
University of Waterloo

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INTRODUCTION

This chapter provides the essential methodological details for the 2002 Youth Smoking Survey (YSS). As described in Chapter 1, the 2002 YSS was designed to provide a comprehensive look at the smoking habits of Canadian youth in grades 5-9, as well as to collect information on the use of alcohol and other drugs by youth in the older grades (7-9). Parents of youth in the survey also provided data. The 2002 YSS was modeled after the school-based portion of the 1994 YSS. Thus, taken with the 1994 YSS, the 2002 YSS provides a means for examining changes in smoking rates among youth in grades 5-9 who were approximately 10-14 years old at the time of each survey. As well, like the 1994 YSS, the 2002 YSS gathered information on a wide array of factors that might be associated with the smoking habits of Canadian youth. The comparisons between these factors and their associations with smoking also offer an opportunity to address changes over the period between surveys, both in these associated variables and in the strength of their association with smoking.

As with any survey, understanding the basic methods used to gather, analyse and present the data is essential in order to put the results in perspective. This chapter describes the basic features of the survey design and the data collection protocol. It also deals with some analysis issues that will be further described or amplified in later chapters. Since a major aim of the analyses presented in later chapters will be to compare findings in 2002 to those from 1994, information on the 1994 survey is also summarized here. Further details on the 1994 survey can be found in the *Youth Smoking Survey, 1994: Technical Report*[1]. In addition, readers wishing more detail on either the 1994 YSS or 2002 YSS should consult the *Youth Smoking Survey 1994: Microdata User's Guide*[2], and/or the *Youth Smoking Survey 2002: Microdata User's Guide*[3].

SURVEY DESIGN

The 2002 YSS gathered data from students in grades 5-9 and their parents between November 2002 and January 2003. The survey collected information on the prevalence of smoking, types of smoking behaviour, social and demographic factors associated with the behaviour, where and how youth obtain cigarettes, beliefs and attitudes about smoking, and recollection and opinions on health warnings messages on cigarette packages. In addition to the core set of tobacco questions, students in grades 7-9 were asked questions on their alcohol and non-medical drug use.

The 2002 YSS differed from the 1994 YSS in several respects. First, in 1994, youth aged 10-14 were surveyed in schools, while youth 15-19 were surveyed by telephone at home. Beginning in 1999, data from the 15-19 year age group has been obtained on a regular basis as part of the Canadian Tobacco Use Monitoring Survey (CTUMS). Consequently, youth 15-19 were not surveyed in the 2002 YSS. Second, the 1994 questionnaire focused only on smoking and related variables, whereas the 2002 YSS questionnaire was more comprehensive, including items related to alcohol and other drug use and tobacco control policy (e.g., acquisition of and access to cigarettes).

Third, the 2002 YSS included a more extensive survey of the parents of children who participated in the school survey. The parent survey collected information about parental smoking behaviour, smoking restrictions and socio-economic variables. The 1994 YSS parent survey included only items on household membership, occupation and labour force activity. Finally, to be consistent with the way results of provincial school-based surveys are reported, in this report results are presented by grade, rather than by age as was the case in the 1994 YSS.

Target Population

In any survey, the target population is the population to which the conclusions from the survey may be assumed to apply. In the 2002 YSS, the target population consisted of all young Canadian residents in grades 5-9 inclusive attending public and private schools in the 10 Canadian provinces. Youth residing in the Yukon, Nunavut and the Northwest Territories were not included, nor were youth living in institutions or on First Nations reserves. Further, youth attending special schools (e.g., schools for the blind) or attending schools on military bases were excluded from the target population. In addition, youth enrolled in classes with fewer than 10 children, and young people in remote northern reaches of the provinces were also excluded.

Design

The 2002 YSS was a two-stage stratified clustered design with schools as the primary sampling units and classes as the secondary units. A listing of all public and private schools in Canada that provided enrolment by grade for the 1999-2002 school years was used as the sampling frame. Within each province, each school containing students in grades 5-9 was placed in one of two strata depending on whether the school was located in a Census Metropolitan Area[1] or not, with an additional stratum in Quebec and Ontario for Montreal and Toronto. Within each stratum, for each of grades 5-9, schools were selected with probability proportional to their size, with the selection done independently for each grade so that some schools may have provided classes at more than one grade. Then from the selected schools, field personnel selected one eligible class at random from those in the school at the designated grade. All students in the selected class were to be surveyed. In addition, one parent of each child selected was to complete a 15-item parent survey.

In order to obtain estimates of sample proportions with reasonable precision within province (i.e., a minimum estimable proportion of 0.10 [10%] combined with a maximum coefficient of variation [CV] of 16.5%), it was determined that a total of 20,000 respondents (2,000 per province) would be needed. Within provinces, the sample was allocated proportionately to each stratum based on enrolment figures.

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[1] A Census Metropolitan Area is an area consisting of one or more adjacent municipalities situated around a major urban core that must have a population of at least 100,000.

Based on the above considerations, the final sample consisted of 1070 classes in 982 different schools, in 327 distinct school boards.

DATA COLLECTION AND RESPONSE

Sampling and Non-Sampling Errors

Survey methodologists refer to two major types of errors associated with sample surveys such as the 1994 YSS and the 2002 YSS: sampling errors and non-sampling errors. Sampling errors (see below) result because the chosen sample is only one of many that could have been selected using the sampling scheme. Thus, the differences between the results based on a sample and the results from the entire population will differ from sample to sample. These differences are known as sampling errors. The likely size of sampling error can be quantified using statistical methods.

While sampling errors refer to the simple chance aspect of error associated with using a sample rather than the whole population, non-sampling errors are errors that may be introduced due to other factors. A very common cause of non-sampling error is non-response. Non-response is unlikely to be strictly by chance as there may be different kinds of people who refuse the whole, or parts of, the survey. Non-response can be introduced if school boards/districts refuse to participate, if schools in consenting boards do not participate, if students in consenting schools do not get parental permission or refuse to participate, or if students with consent are absent on the day data are collected. Another type of non-response occurs when a student does not answer a question that the student should have answered. This could happen if the student does not understand or misinterprets a question, refuses to answer a question, cannot recall the requested information or misses a question because of skip patterns. In addition, students could answer a question that, based on answers to previous questions, is not intended for them. The results based on those that do provide data may not agree with the true values in the whole population. For example, if schools with very active tobacco control programs are more likely to consent to the survey, and/or if students who are absent are more likely to be smoking, then drawing conclusions for the whole population of youth based on those giving consent for the data collection in consenting schools could under estimate the true smoking rates.

Adjustment for some of the effect for non-response is possible by weighting (see below), but there are no methods for fully quantifying the systematic biases introduced by non-response. Hence, a full discussion of response rates is very important.

School Component Consent Procedures

The consent procedure began in June 2002 with an approach to the school boards/districts that contained selected schools. In addition, the Council of Ministers of Education was given a notice of intention in the fall of 2002. Sampled schools from non-consenting boards/districts were replaced with schools from consenting boards that had a similar profile in terms of enrolment and grades taught. By replacing with similar schools, it was hoped that the impact of non-response would be minimized. In some instances when large boards/districts refused, there were no comparable consenting boards and they were not replaced.

After board/district consent was received, consent was obtained from principals of selected schools. For school refusals, a similar procedure to that for the boards/districts was used to replace the non-consenting schools to reduce the impact of non-response. In instances where selected schools had closed, moved or no longer taught the selected grade, a decision on whether to replace the school with the school to which the students would have relocated was based on whether other students would already be in that grade and/or whether students from the same grade in other schools would have transferred to that school.

Following school approval, trained interviewers visited the school and prepared a package for each student that contained an introductory letter and parental permission consent form. Students were to take the package home. The completed consent forms were picked up at the school by the interviewer one week later. At that second visit, those students who had not returned the parental consent form were identified and their parents were contacted by telephone to provide consent over the telephone. Some principals would not release parents' telephone numbers, and, in these instances, further recruitment of the children who had not returned parental permission forms could not occur.

Parent Component Consent Procedure

If a student had parental consent and if a telephone number was available, an interview was attempted with a parent of the participating child. If there was consent for the child but no telephone number, the parent interview was not attempted. Parents who were contacted by telephone could refuse to participate in the interview.

Sample of Classes and Students

Table 2-A provides participation information at the board/district level and school level. Using the procedures described above, replacements were found for many of the boards/districts and schools that denied consent. However, in some provinces, school boards could not be replaced because the very large size of the boards made them unique, or because there were no other boards of that size available as replacements. This was particularly true in Alberta and Ontario where several large, urban boards refused to provide consent and could not be replaced. In fact, in Alberta, there were no schools selected from major urban boards. Consequently, the proportion of students from major urban boards is less than would be expected, and, if such students are more (or less) likely to smoke, the resulting estimates for these provinces will be biased.

A total of 1070 classes were selected to participate in the survey. After replacement, consent was obtained from boards/districts to approach 1001 schools (94% of the intended number). At the school level, consent was given to conduct the survey in 955 classes, representing 95% of the 1001 classes where approval was obtained from boards/districts and 89% of the intended 1070 classes. By comparison, in 1994, 80 classes per province (800 in total) were chosen for the original sample using the procedure described above. After class replacements, 14270 students from 755 classes provided usable questionnaires for the 1994 YSS.

In the 2002 YSS, the final number of classes where consent was received from boards/districts was less than 90% of the intended sample size for Alberta (73%) and Ontario (88%). Further, in Alberta, the number of classes recruited was less than 90% of the number of classes for which the boards/districts had provided consent. The relatively large coefficients of variation for Alberta and Ontario are due, in part, to this non-response.

Table 2-B gives the data on student response rates by province for the 2002 YSS. At the student level, all provinces except Ontario (77%) and Manitoba (77%) obtained usable questionnaires from at least 80% of the possible students in the classes in the sample. The 2002 overall student-level response rate (82%) is similar to that from the 1994 YSS where 80% of eligible students provided data. In 1994, Quebec (77%), Ontario (71%) and British Columbia (78%) had student response rates lower than 80%.

Total non-response was handled by adjusting the weights attached to the responses of students who did respond to the survey to compensate for those who did not respond (see below).

Table 2-A
Number of Classes for Which Consent was Given (After Replacement) by Province, Canada, 2002 Youth Smoking Survey

Province	Board Level			School Level		
	Total	Consent	Rate	Total	Consent	Rate
Canada (Total)	1,070*	1,001	94%	1,001*	955	95%
NL	78	78	100%	78	77	99%
PE	54	54	100%	54	54	100%
NS	89	89	100%	89	85	96%
NB	83	83	100%	83	79	95%
QC	155	150	97%	150	148	99%
ON	169	148	88%	148	134	91%
MB	96	96	100%	96	91	95%
SK	92	92	100%	92	92	100%
AB	124	91	73%	91	79	87%
BC	130	120	92%	120	116	97%
*Note that the totals have not been adjusted to reflect the addition of replacement boards. Hence the true response rates may be less than shown here.						

Table 2-B
Student Participation Rates by Province, Canada, 2002 Youth Smoking Survey

Province	Target Population*	Recruited Classes	Eligible Students	Usable Questionnaires	% Usable Questionnaires
Canada (Total)	2,027,505	955	23,217	19,018	82%
NL	33,944	77	1,862	1,574	85%
PE	10,087	54	1,305	1,091	84%
NS	61,566	85	2,108	1,784	85%
NB	49,049	79	2,020	1,656	82%
QC	487,440	148	3,869	3,229	83%
ON	770,598	134	3,343	2,583	77%
MB	76,157	91	2,000	1,534	77%
SK	67,600	92	2,024	1,707	84%
AB	219,143	79	1,803	1,442	80%
BC	251,921	116	2,883	2,418	84%

*Target population refers to the number of youth in grades 5-9 in the province

Data Collection

Questionnaire content was the responsibility of Health Canada's Tobacco Control Programme. The 2002 YSS questionnaire (Appendix B) was designed to be comparable with that used in 1994. Minimal modifications were made to the wording of some of the questions and new questions from the National Longitudinal Survey of Children and Youth that asked about activities and self-esteem were added. Questions on alcohol and non-medical drug use were developed in collaboration with the Drug Strategy and Controlled Substances program of Health Canada, and added at the end of the questionnaire for youth in grades 7-9. Both the English and French versions of the 2002 YSS draft questionnaire were pilot tested in the spring of 2002 with boys and girls from various grades, smoking experiences, and levels of academic achievement.

The parent questionnaire (Appendix A) was significantly modified from the 1994 version with additional questions on demographics, child access to health services, smoking restrictions in the home and smoking prevalence in the home.

Trained interviewers were responsible for selecting the classes to be surveyed, arranging for parental consent, administering and gathering the completed questionnaires, and conducting the parent telephone interview. The student questionnaires were completed in the students' classroom with the teacher present. Data collection sessions averaged 30-40 minutes. To preserve confidentiality the teacher was asked not to move amongst the students.

Each child received a questionnaire in an envelope labelled with the student's name. The questionnaire inside contained a unique identifier, but not the student's name or other identifying information. The interviewer read the introduction and instructions, completed the first nine questions with the students to show them how to make different types of entries, and explained how to complete the smoking wheel in question 21. Students were instructed to place their completed questionnaires face down on the desk, not in the original envelope. The interviewer then first collected the empty envelopes and finally the questionnaires were collected. The unique identifier allowed the child's questionnaire to be linked to the parent's questionnaire.

From the original class lists, and the empty envelopes and the envelopes not distributed, it was possible to determine the response rates by class. No attempt was made to collect data from absent students.

Parent Survey

A parent of each participating child was contacted by telephone for the brief 15 question survey using the procedures described above. The survey included questions about the parent's smoking behaviour and attitudes towards smoking, household smoking restrictions, and basic socio-economic information. In total, there were1055 students for whom some or all of the parental information was missing.

Most of this was due to non-response to the entire survey rather than non-response to selected items.

DATA PROCESSING AND ANALYSIS

Data were collected from students and parents between November, 2002 and January, 2003.

Questionnaire data entry and processing were performed at the Statistics Canada head office. The quality of the data entry was checked by random verification of 20% of the questionnaires. It is estimated that the data entry error rate was below 2%.

A total of 17,709 parents were interviewed and agreed to share their results with Health Canada. The data from these parents and their children are contained in a "share file" available only to Health Canada. In total, 19,018 students completed the survey, and, after removing variables that could possibly identify individual students, their responses were stored in the Public Use Master File (PUMF) provided by Statistics Canada. With the exception of certain analyses using data from the parent surveys or variables not available on the PUMF, the analyses that are presented in this report have been based on the Public Use Master File (PUMF). It is important to note that the PUMF does not contain the data obtained from the parent survey except for a family composition variable.

Missing Data

The questionnaire was designed with very few skip patterns to minimize problems with confusion over which questions were to be answered. However, there were certain questions, noted below, where the missing data rate (i.e., the respondent answered "do not know", "refuse" or did not answer at all) exceeded 15%.

- Question Y_Q8 that asked about the student's preferred weight (15% missing).
- Question Y_Q46 that asked the students for their opinions on smoking (15-32% missing).
- Question Y_Q55 that asked about the school rules concerning smoking (16% missing).
- Question Y_Q56 that asked about whether most smokers obey the school's rules about smoking (42% missing).
- Question Y_Q59 that asked about the student's spending money (23% missing).
- Question Y_Q80 that asked for the numbers of deaths due to cigarettes relative to other causes (32-46% missing).

Question 16 ("Have you smoked 100 or more cigarettes in your lifetime?"), Question Y_Q11A ("Have you tried smoking even just a few puffs?"), and Question Y_Q14 (Have you ever smoked a whole cigarette?") are critical questions for defining smoking status (see below) and also for determining valid skip patterns (i.e., which questions should be answered and which could be omitted). If responses to these questions were "Don't know" or were missing altogether, an imputation scheme involving responses to other related questions was used to determine a value for the respondent where possible. Responses to other than these smoking questions were not imputed if missing.

Suppressed Information

Information that could identify individuals who participated in the survey, such as the name of the respondent or the respondent's school, is not reported here. Other information that has been deemed sensitive has been suppressed in this report. For example, to avoid disclosure of cigarette product brand information, responses to Question Y_Q22B ("Which brand do you usually smoke") have been recoded to indicate only the strength of the brand and its tar value. As well, responses to Question Y_Q75 and Question Y_Q78 that mention Ritalin and Gravol have been grouped with other prescription and non-prescription drugs.

Weighting of Responses

The main objective of any sample survey is to provide reasonable estimates of population parameters (e.g., totals, proportions, and means within specified subgroups such as age or sex groups). In the 2002 YSS, responses were obtained from 19,018 students from all 10 provinces. Responses from these 19,018 students are used to provide estimates for the 2,027,506 students in the target population (grades 5-9). Thus, each youth in the 2002 YSS sample represents about 107 Canadian youth. Put another way, the fraction of the target population sampled in the 2002 YSS was 0.0094, or 0.94%. Because of the way the sampling was done, the sampling fractions varied from province to province. For example, in Prince Edward Island, 10.8% of the target population was sampled while in Ontario only 0.34% of the target population was sampled.

Table 2-B (above) gives the sample size and target population size for each of the provinces. In order for the estimates from the sample to be reasonable estimates of the corresponding quantities in the target population, a weight is assigned to each respondent's data representing the number of respondents represented by that individual. These weights reflect the probability of selection of the respondent and adjustments for non-response. For each record, there is an initial sampling weight that is inversely proportional to the probability of selection of that grade-school combination within the stratum. Then there is an adjustment for non-response at the school level. Next there is an adjustment for the class within the school followed by adjustments for class and then student non-response. Finally, there is a post-stratum adjustment to bring the weighted totals in line with the age-sex-province totals in the target population.

In this report, entries in the tables are based on the weighted responses and, hence, give estimates of the total number of students in the target population that satisfy the criteria for inclusion in the tables. Reported proportions and means are based on these weighted estimates. It is important to distinguish between these population estimates and sample sizes that are much smaller but are the relevant figures for quantifying the likely size of sampling errors (see below).

Sampling Error and Reliability

In both the 1994 YSS and the 2002 YSS the estimates of population quantities are based on samples from the target population. The *standard error of the estimate* is one way to quantify the variation that might exist from (hypothetical) sample to (hypothetical) sample drawn from the target population when using the actual sampling methods. The standard error will depend on the choice of the design, the size of the sample chosen, the actual responses, and the weights assigned to the respondents.

With a complicated two-stage cluster design such as this one, a simple formula relating sample size and precision will not apply. For example, because students in the same class may be more similar than students in another class or school, we would expect that the responses from students in the same class would be correlated (i.e., not independent). As well, two schools in the same board/district may be more similar than two schools in different board/districts, and so the possible dependence between respondents within a board/district must also be considered.

These possible correlations between respondents imply that estimates of variation between samples are larger than those that would be obtained from simple random samples (i.e., independently sampling individual students) from the target population. One statistic that can be calculated to estimate the inflation in the variance due to the more complex survey design is called the *design effect*. For the 2002 YSS, Statistics Canada estimates the design effect to be 2.70 for the whole design. This means that the design would require 2.70 times more respondents to yield estimates with the same precision as a design that called for a simple random sample of participants from the target population. Of course, a design based on a simple random sample would be much more costly to implement, so the multi-stage design will be more cost-efficient provided the design effect is not too large. In comparison, the design effect for the school component of the 1994 YSS was estimated to be 4.96, leading to greater uncertainty in estimates for the same size sample in YSS 2002 compared to YSS 1994.

One common method for quantifying variation in sample surveys is through the use of the *coefficient of variation* (CV). The CV for an estimate is defined as the ratio: *CV = the standard error of the estimate/the estimate*, and it is usually expressed as a percentage. So, if the CV for an estimate is given as 8%, it implies that the size of the standard error of the estimate is 8% of the estimate itself. In general, the lower the CV, the more precise will be statements made about underlying population quantities. The CV takes into account the sample size, design effect, the values of the response and the sample weights.

Statistics Canada has guidelines about releasing estimates based on the CV of the estimate. In general,

- If an estimate is based on a sample of at least 30 respondents and has a CV between 0% and 16.5%, it is deemed *acceptable*.
- If an estimate is based on a sample of at least 30 respondents and has a CV between 16.6% and 33.3%, it is deemed *marginal* and is reported only with a cautionary note concerning the high levels of error. The message "Moderate Sampling Variability" will accompany such estimates in the tables in later chapters.
- If an estimate is based on a sample of fewer than 30 individuals or has a CV greater than 33.3%, it is of *unacceptable quality* and will not be released.

Estimation and Statistical Testing

A 95% confidence interval is a range of values that, with probability 0.95, will contain the true population value for the quantity being estimated. Based on the CV for an estimate, it is possible to provide a *confidence interval* for the estimated quantity (*estimate* $\pm 2\sqrt{\frac{\text{estimation*CV}}{100}}$*)*. The *Microdata Users Guides*[2,3] provide detailed tables of CV's for the 1994 YSS and 2002 YSS for estimated totals along with instructions on how to use these tables to obtain standard errors and confidence intervals for proportions, differences between proportions, ratios, and differences between ratios.

It is very common to wish to compare estimates from two or more groups of individuals. For example, it may be of interest to compare male and female smoking rates, or to make comparisons in smoking rates between provinces or to compare smoking rates between those students who report having parents who smoke and those who report having parents who do not smoke, and so forth. With these comparisons, it is important that the observed differences in the estimates be judged against the sampling variation in the estimates. A test of significance can determine whether the observed difference could reasonably be due to chance or whether the difference is so large that it is likely reflective of an underlying true difference between the groups being compared. An element of judgement, sometimes called "clinical" judgment (i.e., understanding the context of the difference), is often required as well, since with large samples, differences that are not meaningful may be judged to be statistically significant.

With complex survey designs such as this one, the calculation of the correct statistical quantities to perform statistical tests is not straightforward. For the purposes of this report, tables to guide the interpretation of tests of significance between percentages for *two distinct* subgroups of respondents from the total sample are presented in the Appendix. Tables 2-1a, 2-1b, and 2-1c give the *smallest* estimated population total for the two subgroups being compared that is required for two percentages to be significantly different at the 5% level. Because of the differing design effects, Table 2-1a should be used when comparing subgroups within the 2002 YSS. Table 2-1b should be used when comparing subgroups within the 1994 YSS, and Table 2-1c should be used when comparing one subgroup from 2002 with the same subgroup in 1994. It is important to note that the estimated population totals for significant comparisons within provinces will generally be lower than those for Canada.

- For example, when using Table 2-1a to compare sub-groups from the 2002 YSS, if one estimated percentage was 45% and a second was 50%, this difference would be judged significant at the 5% level if the smaller of the two estimates of the number of children in a subgroup is at least 229,213. As a second example, if one estimated percentage was 65% and a second was 80%, the smaller subgroup must have an estimated total population of at least 20,362 children for the difference to be significant. This is a conservative test that is only approximate given the complex survey design, but it should serve as a guideline for examining significant differences. Note also that this table applies only when comparing two independent subgroups of children (e.g., percentages of daily smokers in two age groups). It would not apply, for example, when comparing two responses to the same question for a single group of children (e.g., percentages of daily and non-daily smokers in the same age group).

Adjustment for Other Factors

In this report, there has been no adjustment for other factors that might be related to the responses being considered other than those that are controlled by subdividing the data, as reported in the tables. Readers need to be aware that other variables could potentially confound the associations presented here. For example, socio-economic status could confound the association between spending money and cigarette smoking rates. To fully adjust for other variables would require more sophisticated modeling techniques, such as multiple (logistic) regression, that are beyond the scope of this technical report.

Principal Variables

The principal response variable in this report is self-reported cigarette smoking. There are many ways to categorize the smoking habits of youth. For the purposes of this report, the authors have revised the categories that were employed in the 1994 report with ones that are more reflective of the smoking behaviour observed by youth in these grades. In particular, in this population, it may not be appropriate to use the benchmark of having smoked at least 100 cigarettes to be defined as a smoker[4]. The YSS population is more at risk of trying, or experimenting with, cigarette use than are children in later grades. Hence, in this report, any child who has smoked even a few puffs of a cigarette is considered to have ever smoked. The definitions employed are as follows:

- *Ever Smoker*: Has tried smoking a cigarette, even just a few puffs
  - Ever Smokers can be further classified as *Puffers* (Has tried a few puffs, but has never smoked a whole cigarette) and *Smoked Beyond Puffing* (Has smoked a whole cigarette)

  - Smoked Beyond Puffing can be further classified as *Smoked Beyond Puffing, Daily Smoker* (Has smoked every day in the past 7 days) and *Smoked Beyond Puffing, Not Daily Smoker* (Has not smoked every day in the past 7 days)
- *Never Smoker:*
  - Never Smoker can be further subdivided into *Never Smoker who has Never Seriously Thought About Smoking* and *Never Smoker who has Seriously Thought About Smoking* in order to measure those who were more likely to try smoking in the future.

Table 2-C summarizes the categories of smoking behaviour employed in this report. For comparison purposes, the findings from the 1994 YSS have been re-analyzed using the revised definitions of smoking behaviour. Each chapter reports findings according to one of the three types of categorical definitions presented in Table 2-C.

Table 2-C
Definitions of Categories of Smoking Behaviour, Youth Smoking Survey 2002

System	Description	Definition
2 category	Never Smoker	Has never tried a cigarette, even just a few puffs (Y_Q11A)
	Ever Smoker	Has tried a cigarette, even just a few puffs (Y_Q11A)
3 category	Never Smoker	Has never tried a cigarette, even just a few puffs (Y_Q11A)
	Puffer	Has tried a cigarette, even just a few puffs (Y_Q11A), but has never smoked a whole cigarette (Y_Q14)
	Smoked Beyond Puffing	Has smoked a whole cigarette (Y_Q14)
5 category	Never Smoker who has Never Seriously Thought About Smoking	Has never tried a cigarette, even just a few puffs (Y-Q11A) and has never thought seriously about smoking (Y_Q11B)
	Never Smoker who has Seriously Thought About Smoking	Has never tried a cigarette, even just a few puffs (Y-Q11A) but has thought seriously about smoking (Y_Q11B)
	Puffer	Has tried a cigarette, even just a few puffs (Y_Q11A), but has never smoked a whole cigarette (Y_Q14)
	Smoked Beyond Puffing, Not Daily Smoker	Has smoked a whole cigarette (Y_Q14), but has not smoked each of the past 7 days (Y_Q21)
	Daily Smoker	Has smoked every day in the past 7 days (Y_Q21)

Note: Some chapters identify other sub groups of smokers. In such instances, the definitions are clearly laid out in the text.

Validity of Self-Report Measures

One common concern with self-reported measures is whether a respondent will respond truthfully for behaviours that could be seen as sensitive or, in some cases, illegal. There is a large literature on measuring smoking behaviours in youth as young as those studied here. In other studies, measures to promote truthful response have included collection of biological samples of breath or saliva to either validate the youth's report or to encourage honest reporting through the threat of being able to validate the response ("bogus pipeline")[5]. The collection of such samples is not feasible in a survey as large as the 2002 YSS. Consequently, measures to ensure that students realized that their responses would not be seen by their teachers, other students or parents were the primary means of encouraging truthful responses. These measures included having data collected by trained interviewers and not teachers, having clear instructions on how to complete the questionnaire confidentially, and by having the message that Statistics Canada will keep the answers private and that no one from the student's school or home would see what the student wrote. This information was repeated on each page of the questionnaire.

These measures are the same as those taken for the 1994 YSS. It is not possible to determine if there is systematic under reporting of either smoking behaviour or consumption of cigarettes within the sample; however, the lessons from systematic studies of smoking in youth[6] would suggest that the amount of under reporting is likely small.

The self-report of alcohol and other drug use has not been as extensively studied as that of cigarette use in youth in this age range. Other provincial surveys that include alcohol and other drug use[7]do use similar methods to ensure confidentiality and, hence, promote truthful response.

SUMMARY

The 2002 YSS is a complex survey that provides important information about the smoking behaviour of Canadian youth in grades 5-9. In the chapters that follow, analyses are presented to examine both the rates of cigarette smoking among Canadian youth and factors associated with the use of cigarettes. In addition, comparisons between the 1994 YSS and the 2002 YSS allow for the study of trends over time in students in these grades. The use of alcohol and other drugs by Canadian youth in grades 7-9 is also examined.

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APPENDIX TABLES

Table 2-1a
Approximate Population Total Required in the Smaller of Two Groups for Significance (p<0.05) when Comparing Two Proportions in Canada for the 2002 Youth Smoking Survey

	Proportion								
Proportion	**0.05(0.95)**	**0.10(0.90)**	**0.15(0.85)**	**0.20(0.80)**	**0.25(0.75)**	**0.30(0.70)**	**0.35(0.65)**	**0.40(0.60)**	**0.45(0.55)**
0.10(0.90)	63,766								
0.15(0.85)	20,681	100,532							
0.20(0.80)	11,170	29,298	132,702						
0.25(0.75)	7,324	14,745	36,766	160,277					
0.30(0.70)	5,308	9,191	17,809	43,085	183,255				
0.35(0.65)	4,085	6,411	10,771	20,362	48,255	201,638			
0.40(0.60)	3,271	4,787	7,330	12,064	22,404	52,277	215,426		
0.45(0.55)	2,693	3,740	5,362	8,066	13,069	23,936	55,149	224,617	
0.50(0.50)	2,262	3,016	4,115	5,809	8,617	13,787	24,957	56,872	229,213
0.55(0.45)	1,930	2,489	3,267	4,396	6,128	8,985	14,218	25,468	57,447
0.60(0.40)	1,666	2,091	2,660	3,447	4,584	6,319	9,169	14,362	
0.65(0.35)	1,452	1,780	2,206	2,773	3,555	4,678	6,383		
0.70(0.30)	1,275	1,532	1,856	2,275	2,830	3,590			
0.75(0.25)	1,125	1,329	1,580	1,894	2,298				
0.80(0.20)	998	1,161	1,356	1,596					
0.85(0.15)	889	1,019	1,172						
0.90(0.10)	793	898							
0.95(0.05)	711								

Note: To use this table, select the two proportions to be compared either both from the values not in parentheses or both from the values in parentheses. The table entry gives the estimated total population for the smaller of the two groups in order that the proportions are significantly different (p<0.05).

Table 2-1b
Approximate Population Total Required in the Smaller of Two Groups for Significance ($p<0.05$) when Comparing Two Proportions in Canada for the 1994 Youth Smoking Survey

	Proportion								
Proportion	**0.05(0.95)**	**0.10(0.90)**	**0.15(0.85)**	**0.20(0.80)**	**0.25(0.75)**	**0.30(0.70)**	**0.35(0.65)**	**0.40(0.60)**	**0.45(0.55)**
0.10(0.90)	150,426								
0.15(0.85)	48,787	237,158							
0.20(0.80)	26,351	69,115	313,049						
0.25(0.75)	17,279	34,783	86,732	378,098					
0.30(0.70)	12,522	21,683	42,011	101,639	432,306				
0.35(0.65)	9,637	15,124	25,410	48,034	113,836	475,672			
0.40(0.60)	7,716	11,293	17,292	28,459	52,852	123,322	508,197		
0.45(0.55)	6,352	8,823	12,648	19,027	30,831	56,466	130,098	529,880	
0.50(0.50)	5,337	7,115	9,708	13,702	20,328	32,525	58,876	134,164	540,721
0.55(0.45)	4,553	5,872	7,708	10,371	14,455	21,195	33,541	60,080	135,519
0.60(0.40)	3,931	4,933	6,274	8,131	10,814	14,907	21,629	33,880	
0.65(0.35)	3,426	4,200	5,204	6,542	8,385	11,035	15,058		
0.70(0.30)	3,007	3,614	4,379	5,367	6,676	8,470			
0.75(0.25)	2,655	3,135	3,727	4,469	5,421				
0.80(0.20)	2,355	2,738	3,200	3,764					
0.85(0.15)	2,096	2,403	2,766						
0.90(0.10)	1,871	2,117							
0.95(0.05)	1,673								

Note: To use this table, select the two proportions to be compared either both from the values not in parentheses or both from the values in parentheses. The table entry gives the estimated total population for the smaller of the two groups in order that the proportions are significantly different ($p<0.05$).

Table 2-1c

Approximate Population Total Required in the Smaller of Two Groups for Significance ($p<0.05$) when Comparing Two Proportions in Canada: One From the 1994 Youth Smoking Survey and One From the 2002 Youth Smoking Survey (continued below)

Proportion from the 2002 YSS	Proportion from the 1994 YSS									
	0.05(0.95)	**0.10(0.90)**	**0.15(0.85)**	**0.20(0.80)**	**0.25(0.75)**	**0.30(0.70)**	**0.35(0.65)**	**0.40(0.60)**	**0.45(0.55)**	**0.50(0.50)**
0.05(0.95)										
0.10(0.90)	91,598									
0.15(0.85)	27,744	151,321								
0.20(0.80)	14,197	42,029	203,713							
0.25(0.75)	8,874	20,258	54,481	248,775						
0.30(0.70)	6,144	12,122	25,506	65,100	286,507					
0.35(0.65)	4,518	8,120	14,912	29,938	73,888	316,909				
0.40(0.60)	3,451	5,818	9,802	17,244	33,557	80,842	339,981			
0.45(0.55)	2,703	4,354	6,915	11,191	19,118	36,360	85,964	355,722		
0.50(0.50)	2,152	3,353	5,107	7,808	12,287	20,533	38,350	89,254	364,134	
0.55(0.45)	1,730	2,634	3,890	5,710	8,497	13,090	21,491	39,525	90,711	365,215
0.60(0.40)	1,398	2,095	3,025	4,311	6,163	8,982	13,599	21,990	39,885	90,335
0.65(0.35)	1,130	1,678	2,386	3,326	4,618	6,468	9,264	13,816	22,032	39,431
0.70(0.30)	909	1,347	1,897	2,604	3,537	4,810	6,622	9,343	13,739	21,615
0.75(0.25)	724	1,079	1,513	2,056	2,749	3,657	4,888	6,627	9,218	13,368
0.80(0.20)	568	858	1,205	1,629	2,154	2,820	3,687	4,852	6,482	8,889
0.85(0.15)	434	673	954	1,289	1,694	2,192	2,818	3,626	4,701	6,188
0.9(0.10)	317	515	745	1,012	1,328	1,707	2,169	2,743	3,475	4,435
0.95(0.05)	215	381	569	784	1,033	1,325	1,670	2,086	2,595	3,233

Note: To use this table, select the two proportions to be compared either both from the values not in parentheses or both from the values in parentheses. The table entry gives the estimated total population for the smaller of the two groups in order that the proportions are significantly different ($p<0.05$).

Table 2-1c (continued)

Approximate Population Total Required in the Smaller of Two Groups for Significance ($p<0.05$) when Comparing Two Proportions in Canada: One From the 1994 Youth Smoking Survey and One From the 2002 Youth Smoking Survey

	Proportion from the 1994 YSS									
Proportion from the 2002 YSS	**0.50(0.50)**	**0.55(0.45)**	**0.60(0.40)**	**0.65(0.35)**	**0.70(0.30)**	**0.75(0.25)**	**0.80(0.20)**	**0.85(0.15)**	**0.90(0.01)**	**0.95(0.05)**
0.55(0.45)	365,215									
0.60(0.40)	90,335	358,967								
0.65(0.35)	39,431	88,127	345,388							
0.70(0.30)	21,615	38,163	84,086	324,478						
0.75(0.25)	13,368	20,740	36,080	78,213	296,239					
0.80(0.20)	8,889	12,705	19,407	33,182	70,507	260,670				
0.85(0.15)	6,188	8,356	11,749	17,615	29,470	60,969	217,770			
0.9(0.10)	4,435	5,744	7,620	10,499	15,366	24,944	49,598	167,541		
0.95(0.05)	3,233	4,055	5,150	6,681	8,956	12,658	19,603	36,395	109,981	

Note: To use this table, select the two proportions to be compared either both from the values not in parentheses or both from the values in parentheses. The table entry gives the estimated total population for the smaller of the two groups in order that the proportions are significantly different ($p<0.05$).

CHAPTER 3 - SMOKING BEHAVIOUR

Philip Smith, PhD
Department of Psychology
University of Prince Edward Island

Lorraine Begley, BA (Hon)
Department of Psychology
University of Prince Edward Island

Jennifer L. O'Loughlin, PhD
Department of Epidemiology, Biostatistics and Occupational Health
McGill University

Judy Snider, MSc
Tobacco Control Programme
Health Canada

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HIGHLIGHTS

- In 2002, 77% of Canadian youth in grades 5-9 were never smokers, having never tried a cigarette, even a few puffs. The 23% classified as ever smokers represented 457,000 young Canadians. Ten percent (209,000) were puffers, having tried smoking but never having smoked a whole cigarette, 10% (212,000) had smoked beyond puffing but were not daily smokers, and 2% (36,000) were daily smokers, having smoked every day in the previous seven days.
- The percentage of ever smokers in 2002 (23%) was much smaller than in 1994 (40%). However, daily smokers smoked more cigarettes per day on average in 2002 (8.1) than in 1994 (7.4).
- The 10% of never smokers who had seriously thought about smoking were, in several respects, more similar to ever smokers than to those never smokers who reported never having seriously thought about trying smoking. This similarity was with respect to the higher proportion who had little money to spend or save each week, the lower proportion who had high self-esteem scores, and, for females, the higher proportion who wanted to weigh less than they did currently.
- Grade level was strongly related to smoking behaviour. The prevalence of ever smokers increased from 7% in grade 5 to 42% in grade 9. Among students who smoked, those in higher grades smoked more cigarettes per day than did those in lower grades.
- Overall, there was no difference in the distribution of females and males according to category of smoker. Female daily smokers smoked fewer cigarettes per day on average (7.3) than male daily smokers (8.8).
- There was substantial variation in smoking behaviour across provinces. Ever smoker percentages ranged from 16% in British Columbia and Ontario to 37% in Quebec. Non-smokers' perception that access to cigarettes would be easy ranged from 12% in Manitoba to 23% in Quebec. Ever smoker proportions declined in every province since 1994.
- In 2002 a lower percentage of never smokers perceived that if they wanted to try smoking, access to cigarettes was easy (17% compared to 24% in 1994).
- Use of other tobacco products was associated with smoking cigarettes. In 2002, 59% of ever smokers had tried one or more of cigars, pipes, chewing tobacco, snuff, or bidis, while only 3% of never smokers had done so. The percentage of respondents reporting ever use of cigars or pipes in 2002 (13%) was smaller than in 1994 (20%). The percentage of students reporting ever use of cigars or pipes increased with grade level (from 4% in grade 5 to 26% in grade 9) and was higher in Quebec (24%) than in other provinces.
- These findings underscore the importance of a comprehensive, ecological approach to smoking prevention and reduction among youth so that the public health gains of recent years can be sustained and further progress can be made. An ambitious research agenda is required to inform and support tobacco control initiatives in legislation, regulation, policy, education, and programming.

METHODS

This chapter describes the prevalence of smoking behaviours among youth in grades 5-9, and explores the associations between smoking behaviour and youths' extracurricular activities and perceptions of themselves. The prevalence of smoking behaviours in 2002 is compared to the prevalence in 1994. Methods in this chapter cover definitions and sample issues specific to the chapter. For a detailed description of the survey methods, see Chapter 2.

Definitions

The smoking behaviour taxonomies used in analysis of the 2002 YSS are substantially different from those used 1994 and those commonly used in the literature. Earlier reports used a common, but arbitrary, criterion of smoking 100 or more cigarettes to identify smokers—a criterion carried over from work with adult smokers[1], not reflective of the early smoking experience of youth, and for which there is no evidence of a meaningful relationship with expected outcomes of smoking, including dependence and other health impacts. Earlier measures used a non-smoker category that combined youth as diverse as those who never smoked a puff, indeed, who had never even seriously thought about smoking, and youth who had smoked as many as 99 cigarettes. In an effort to better describe the smoking onset process, and to better utilize the data available from this youth sample, a new smoking behaviour taxonomy was developed by a panel of tobacco control researchers with responsibility for analysis of the 2002 YSS (see Chapter 2, especially Table 2-C).

Throughout this chapter, use of the more detailed categorization of smoking behaviour is contingent on sample size and the nature of the relations under investigation. To enable comparison of 2002 YSS results with 1994 results, when the smoking taxonomies or other definitions were substantially different, the 1994 data were reanalyzed according to the 2002 definitions.

Variables used to describe amount of smoking included the number of days in the last 30 when one or more cigarettes was smoked (Y_Q19), the usual number of cigarettes smoked on days in the last 30 when smoking took place (Y_Q20), and the mean number of cigarettes smoked during the seven days preceding the survey (derived from Y_Q21). An indicator of progress into smoking beyond puffing was the reported age at which the first whole cigarette was smoked (Y_Q15). (The YSS did not ask about age of first puff.) Never smokers' perceived ease of access to cigarettes was assessed (Y_Q13).

Respondents' ever use of other tobacco products, namely smoking cigars or pipe tobacco, using chewing tobacco, using snuff, and smoking bidis, was also assessed (Y_Q10).

Several demographic characteristics were examined for associations with smoking behaviour, including respondents' sex (Y_Q2), grade (GRADE), province (PROVINCE), Aboriginal status (Y_Q4), weekly income available to spend or save (Y_Q59), and language most often spoken at home (Y_Q3). With respect to language, we also distinguished between Francophone students living inside and outside Quebec, to explore possible associations between smoking behaviour and minority language status. Parental education was used as a proxy for socioeconomic status, and measured by the highest level of education reported by the responding parent in the companion YSS Parent's Questionnaire (P_Q14a). A second proxy for socioeconomic status, total annual household income, was also assessed in the Parent's Questionnaire (P_Q17).

Other variables investigated for possible links with smoking behaviours included students' perceptions of their academic performance relative to peers (Y_Q54), self-esteem (Y_Q9), satisfaction with body weight (Y_Q8), and involvement in extracurricular activities (Y_Q5a-h), television and video watching (Y_Q6) and reading for fun (Y_Q7).

Sample and Response

Consistent with Statistics Canada (2004)[2] guidelines, data are not reported here when the cell size is less than 30 or when the coefficient of variation is greater than 33.3% (see discussion of sampling error and reliability in Chapter 2); these restrictions and the low prevalence of some smoking behaviours among young Canadians limit investigation of some smoking behaviours in several sub-populations.

For most items discussed in this chapter, fewer than 10% of the total responses were missing, with students not answering items they would be expected to answer. Missing items could result from respondents mistakenly skipping the items or choosing not to respond to specific questions. For question 8, regarding students' preferred weight, 15% of responses were missing, and for question 59, regarding the amount of money available each week to spend or to save, 23% of responses were missing.

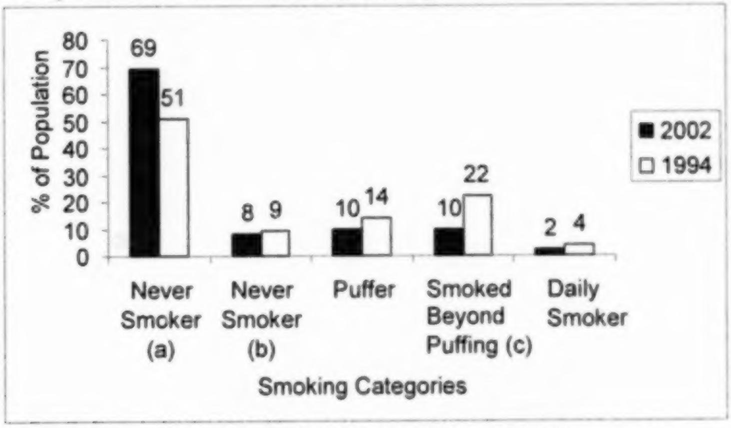
The results presented in this chapter are descriptive and provide information about youth smoking prevalence and its association with other variables of interest. These analyses do not permit causal interpretations because the data were collected in a cross-sectional survey.

FINDINGS

Tobacco Use Behaviours
Prevalence of Tobacco Use: All Youth

Of all youth surveyed, 77% (representing 1,570,000 Canadians in grades 5-9) were classified as never smokers, reporting that they had never tried a cigarette, even a few puffs. The remaining 23% (457,000) were classified as ever smokers. Ten percent (209,000) were classified as puffers, reporting they had tried smoking but never had smoked a whole cigarette, and a further 10% (212,000) were classified as smoked beyond puffing, not daily smokers, reporting they had smoked a whole cigarette but were not currently daily smokers. Two percent (36,000) of respondents were classified as daily smokers, that is, they had smoked every day in the previous seven days. As seen in Figure 3-A, the smoking prevalence in 2002 among Canadian youth in grades 5-9 was markedly lower than it was in 1994.

Figure 3-A
Comparison of Smoking Categories by Year, Canada, Youth Smoking Survey 2002 and Youth Smoking Survey 1994



(a) Never Smoker who has Never Seriously Thought About Smoking
(b) Never Smoker who has Seriously Thought About Smoking
(c) Smoked Beyond Puffing, Not Daily Smoker
Percentages may not add to 100 due to rounding.

Of youth who had smoked in the last 30 days, 62% smoked five or fewer cigarettes a day on the days they smoked, 28% smoked between 6 and 20 cigarettes, and 11% smoked more than 20 cigarettes on the days they smoked (Table 3-1). These proportions were not significantly different from comparable figures for 1994. Of youth who had smoked in the last 30 days, 44% smoked on one to five days (compared to 40% in 1994) and 25% smoked on all 30 days (compared to 16% in 1994).

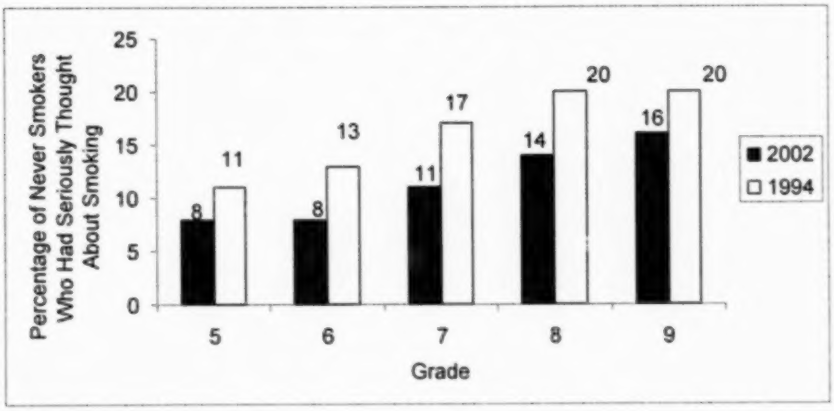
Among youth who reported smoking in the seven days preceding the survey, the mean number of cigarettes smoked each day of the preceding week was 4.2 in 2002, compared to 3.9 reported in 1994. The 2002 respondents smoked more cigarettes per day on Fridays and Saturdays (5.0) than on Sundays through Thursdays (4.0). Youth who were classified as daily smokers smoked 8.1 cigarettes per day on average in 2002, an increase over the 7.4 smoked per day on average in 1994.

Other than cigarettes, tobacco products reported as ever used by youth included cigars or pipes (13%), bidis (3%), snuff (2%), and chewing tobacco (2%) (Table 3-2a). The reported use of cigars or pipes and of chewing tobacco in 2002 was less than that reported in 1994 (Table 3-2b). Whereas 23% of students reported ever using cigarettes, 25% reported ever using any tobacco product. More than half of ever smokers (58%) had tried another tobacco product; only 3% of never smokers had done so.

Never Smokers

A possible indicator of vulnerability to smoking initiation among never smokers is reported contemplation of smoking. Never smokers were asked whether they had ever seriously thought about trying smoking. Ninety percent responded no; these respondents, representing 69% of the population, were categorized as a never smokers, who had never seriously thought about smoking. The other 10% of never smokers (representing 8% of the population) were categorized as never smokers, who had seriously thought about smoking (Figure 3-B).

Figure 3-B
Percentage of Never Smokers Who Had Seriously Thought About Smoking by Grade, Canada, Youth Smoking Survey, 2002, 1994



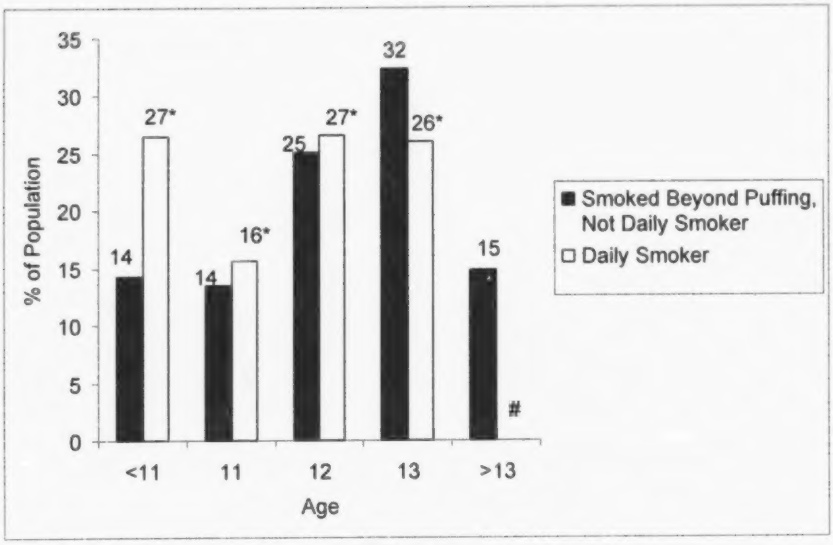
Never smokers were also asked whether they thought they might try smoking within the next month. Fewer than 1% responded "yes", and 6% responded "I don't know" (Table 3-3a). The vast majority, 94%, responded "no."

Never smokers were asked how difficult or easy it would be for them to get cigarettes if they wanted to try smoking. Seventeen percent (compared to 24% in 1994) of all never smokers responded that it would be easy (Table 3-4).

Smoked Beyond Puffing

Respondents who had ever smoked a whole cigarette were asked how old they were when they first did so. Figure 3-C illustrates that for grade 9 respondents (the only grade level for which there are reportable data for daily smokers) daily smokers were much more likely to have first smoked a whole cigarette below age 11 years than were youth who had smoked beyond puffing but were not daily smokers.

Figure 3-C
Age at Smoking First Whole Cigarette Among Grade 9 Respondents, Canada, Youth Smoking Survey 2002



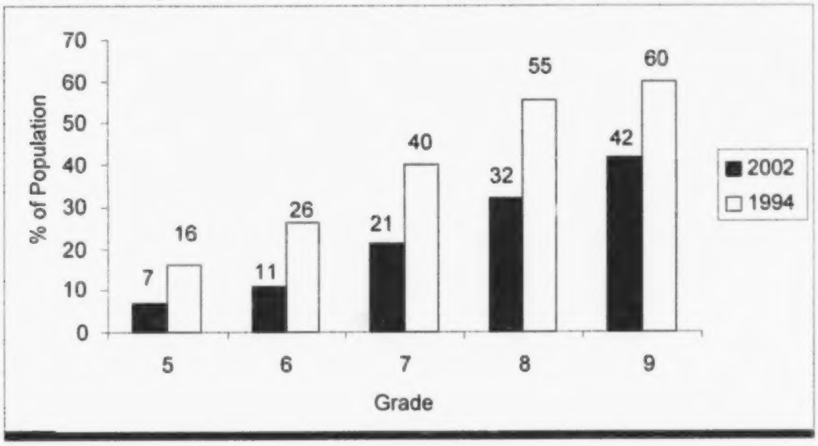
* Moderate sampling variability; interpret with caution
# Data suppressed due to high sampling variability

Population Subgroups

Grade

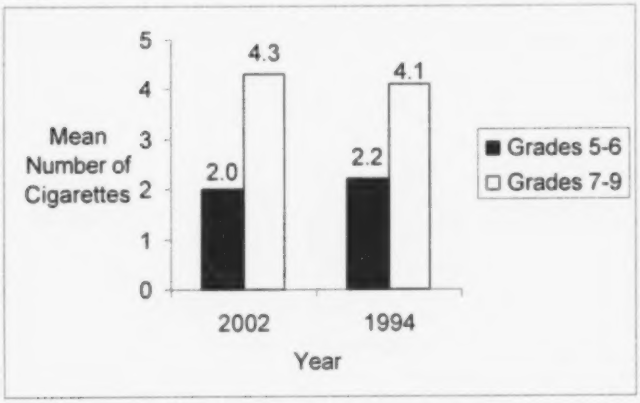
There is a strong relationship between grade level and smoking behaviour, with the prevalence of ever smokers increasing from 7% in fifth grade to 42% in ninth grade (Figure 3-D). Increases through grades 5-9 were observed for each of the three categories of ever smokers (Table 3-5a).

Figure 3-D
Ever Smoker by Grade, Canada, Youth Smoking Survey 2002 and 1994



Among students who had smoked in the previous seven days, those in the higher grades reported smoking more cigarettes per day than did those in the lower grades (Figure 3-E).

Figure 3-E
Mean Number of Cigarettes Smoked Per Day by Those Who Smoked in Previous Seven Days, by Grade, Canada, Youth Smoking Survey 2002 and 1994



The percentage of youth who had tried cigars or pipes increased with grade, from 4% in grade 5 to 26% in grade 9 (Table 3-2).

Sex

As was the case in 1994, the overall distribution of females and males according to smoking categories did not differ (Tables 3-6a,b). Sex differences in percentages of never smokers were evident in two grades: in grade 5, 95% of females compared to 92% of males were never smokers; in grade 8, 64% of females compared to 71% of males were never smokers.

Males who smoked, smoked more cigarettes per day than did females who smoked. Of youth who smoked in the previous seven days, females and males reported smoking a mean of 3.7 and 4.7 cigarettes per day respectively; the comparable figures for 1994 were 3.4 and 4.4 cigarettes per day for females and males. Among daily smokers – those who smoked every day in the previous seven – females reported smoking an average of 7.3 cigarettes per day, and males 8.8 per day (data not shown).

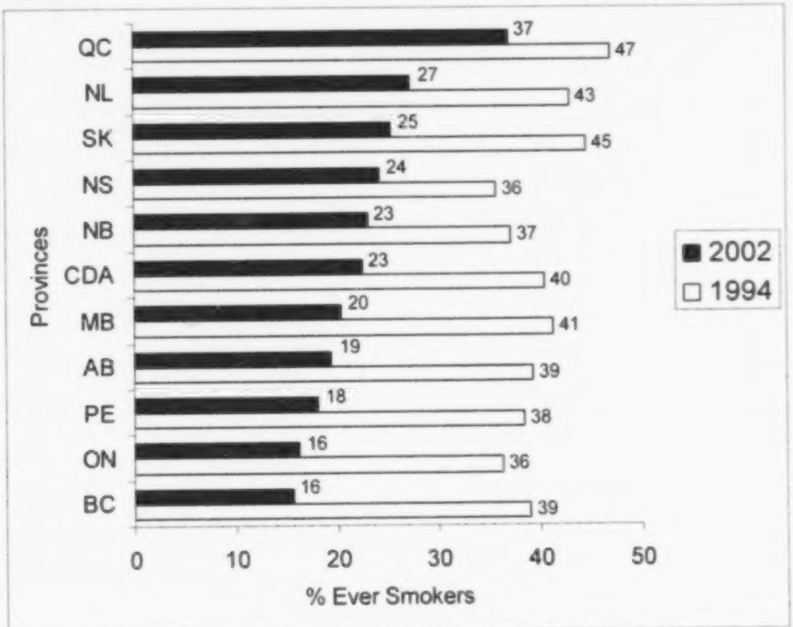
There were no significant differences by sex in measures of thinking about trying smoking in the next month, in perceived ease of access to cigarettes by never smokers, or in age starting to smoke beyond puffing (data not shown).

In 1994, a higher proportion of males than females reported use of tobacco products other than cigarettes (Table 3-2b). In 2002 this difference was not statistically significant, due mostly to decreases in use especially, but not exclusively, by males (Table 3-2a). In 2002 a higher percentage of male never smokers (4%) than female never smokers (2%) reported use of tobacco products other than cigarettes (data not shown).

Province and Region

Provincial variation in smoking behaviour was substantial. Figure 3-F illustrates the proportion of youth classified as ever smokers by province. Ever smoker proportions decreased in every province between 1994 and 2002; they were reduced by more than half in British Columbia, Ontario, Prince Edward Island, Alberta, and Manitoba, the five provinces in which the percentage of ever smokers in 2002 was below the Canadian average of 23%. New Brunswick, Nova Scotia, Saskatchewan, and Newfoundland and Labrador were all within five percentage points of the Canadian average, while Quebec reported the highest ever smoker percentage.

Figure 3-F
Ever Smoker Category by Province, Canada, Youth Smoking Survey 2002 and 1994



Of respondents classified as daily smokers, 58% lived in Quebec, a province with 24% of the Canadian population. In contrast, only 9% of those classified as daily smokers lived in Ontario, a province with 38% of the Canadian population (data not shown.)

Provincial variability in amount smoked was evident (Table 3-7). Respondents in Ontario who had smoked in the last seven days reported smoking a mean of 1.5 cigarettes per day over the last week, well below the Canadian mean of 4.2 cigarettes per day. In contrast, respondents in Newfoundland and Labrador, Prince Edward Island, New Brunswick, and Quebec who had smoked in the last seven days reported smoking a mean of 5.0 or more cigarettes per day.

The perception among never smokers that access to cigarettes was easy if they wanted to try smoking ranged from 12% in Manitoba to 23% in Quebec, with a Canadian average of 17% (Table 3-4).

Provincial differences in use of other tobacco products were generally modest; the most notable exception was that the proportion of Quebec respondents who reported ever having tried cigars or pipes was markedly higher than among respondents in any other province (Table 3-8a).

Language

Language most often spoken at home was associated with smoking behaviour (Table 3-9a). A higher percentage of Francophone students reported being ever smokers (39%), followed by those who reported speaking English and French (34%), Anglophone respondents (18%), and students who spoke languages other than French or English (13%). This ordering of proportions of ever smokers by language mirrored the 1994 findings (Table 3-9b). The percentage of Francophone students living outside Quebec who reported ever smoking was 23%, similar to the national average; the percentage of Anglophone students within Quebec who smoked was 17%.

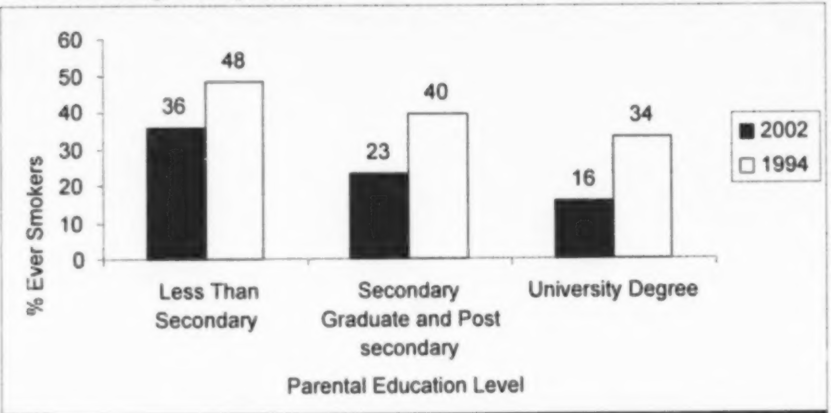
Francophone respondents who reported smoking in the previous seven days smoked a mean of 5.6 cigarettes per day, more than the 3.7 reported by Anglophone students (data not shown).

Proxies for Socioeconomic Status

Parental education was used here as the main proxy for socioeconomic status. Data on the highest education level of the responding parent drawn from the Parent's Questionnaire were matched with YSS responses. Data on youth smoking categories for each of three categories of parental education–less than secondary school, secondary graduate/post secondary education, and university degree–are presented in Table 3-10 and demonstrate that higher parental education was associated with lower levels of youth smoking.

The proportion of ever smokers was lower in 2002 than it was in 1994 among children of parents at each education level, but reductions in ever smoker proportions were greater with higher education (Figure 3-G). The decrease in the percentage of ever smokers among children of university graduates represents a 53% drop, greater than the 43% decrease among children with parents who graduated from secondary school or had some post-secondary education, which in turn was greater than the 27% decrease among children of parents with less than secondary school education.

Figure 3-G
Percentage of Youth Who Ever Smoked by Parental Education, Canada, Youth Smoking Survey 2002 and 1994



The association between smoking category and parental education was similar for females and males (data not shown.)

The association between youth smoking and parental education is consistent with findings related to total annual household income, as reported in the YSS Parent's Questionnaire, another proxy for socioeconomic status. Percentages of student respondents who were ever smokers ranged from 31% in households with total annual incomes below $30,000 to 16% in households with annual incomes over $80,000 (data not shown).

Aboriginal status

While Aboriginal respondents had an opportunity to identify themselves as North American Indian, Métis, or Inuit, small sample sizes (compounded by exclusion from the survey of territorial youth, youth living in remote northern areas of provinces, and youth living on reserves) made analysis by specific Aboriginal group impossible. Collapsing across Aboriginal groups enabled comparison of smoking behaviours between Aboriginal and non-Aboriginal youth.

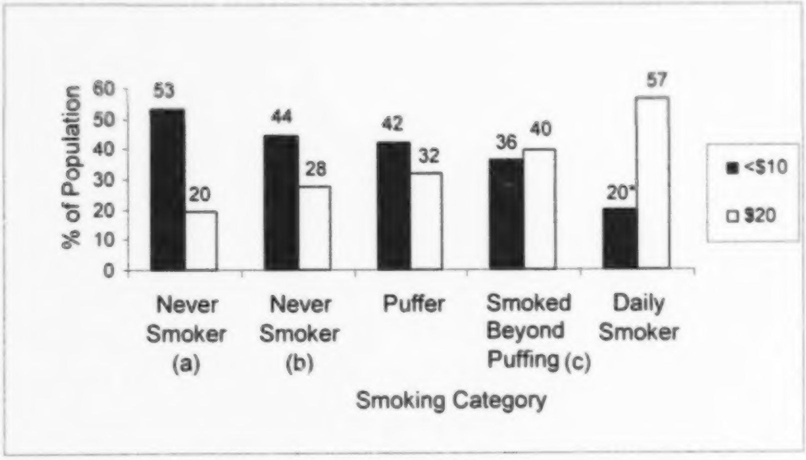
Lower percentages of Aboriginal youth were classified as never smokers (61%) compared to non-Aboriginal youth (78%) (Table 3-11). Limited data available from the 1994 YSS make it impossible to contrast 2002 and 1994 findings on Aboriginal smoking behaviours for Canada, although comparison of smoking behaviours for Aboriginal youth in the four Western provinces for both years is possible(Tables 3-12a,b); a higher percentage of Aboriginal youth in these provinces were never smokers in 2002 (64%) than in 1994 (42%), and a lower percentage of Aboriginal youth were categorized as smoked beyond puffing, not daily smokers in 2002 (17%) than in 1994 (33%).

Aboriginal and non-Aboriginal youth did not differ in number of cigarettes smoked by those who smoked, in age smoking first whole cigarette (10.5 years for Aboriginal youth and 11.5 years for non-Aboriginal youth), or in never smokers' perceived ease of access to cigarettes (data not shown).

Student Income

Students were asked to report how much money they usually received each week to spend on themselves or to save, and these reports were related to smoking categories. As seen in Figure 3-H, a higher proportion of never smokers who had never seriously thought about smoking reported having less than $10 a week than was the case in each other category – including never smokers who had seriously thought about smoking. The proportion of daily smokers who reported a weekly income of $20 or more was almost three times that of never smokers who had never seriously thought about smoking.

Figure 3-H
Weekly Income Available by Category of Smoker, Canada, Youth Smoking Survey 2002



(a) Never Smoker who has Never Seriously Thought About Smoking
(b) Never Smoker who has Seriously Thought About Smoking
(c) Smoked Beyond Puffing, Not Daily Smoker
* Moderate sampling variability; interpret with caution

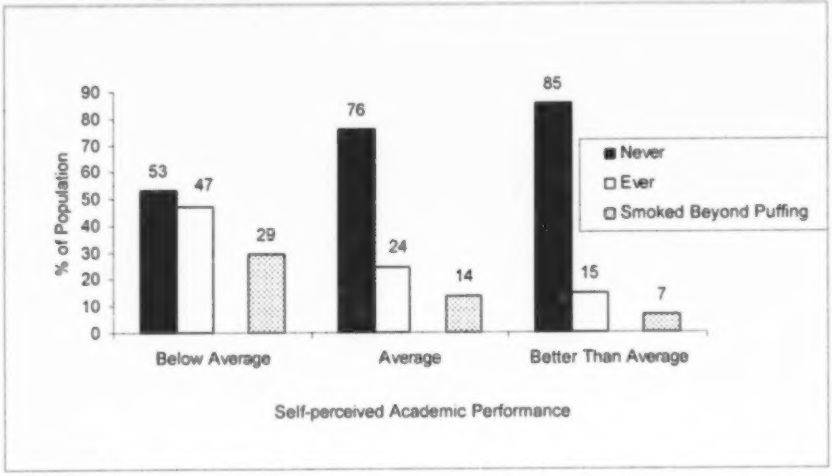
Among never smokers, a greater percentage of those who reported income of $20 per week or more reported that it would be easy for them to access cigarettes if they wanted to try smoking (29%) than among those who reported income of $10-$19 per week (19%) or of less than $10 per week (13%) (data not shown).

Self-Perception of Academic Performance

The YSS did not gather information about students' actual academic performance, but did ask students to report how they did in school compared to other students in their class. Only 7% of respondents rated their academic performance as below average, 56% rated it as average, and 37% rated it as above average. When we compare students in these three categories we are not comparing students in the bottom, middle, and highest thirds of academic performance, but instead are comparing students with different perceptions of their academic performance.

The percentage of ever smokers differed substantially between those who reported that their academic performance was below average (47%), those who reported it was average (24%), and those who reported it was better than average (15%) (Figure 3-I). A higher percentage of students who rated their performance as below average had ever smoked beyond puffing (29%) compared to those who perceived that their academic performance was average (14%) or better than average (7%).

Figure 3-I
Smoking Category by Self-Perceived Academic Performance, Canada, Youth Smoking Survey 2002



Among youth who had smoked in the previous seven days, the mean number of cigarettes smoked per day was higher among those who rated their academic performance as below average (5.9) than it was for those who rated their academic performance as average (3.9) or better than average (3.5).

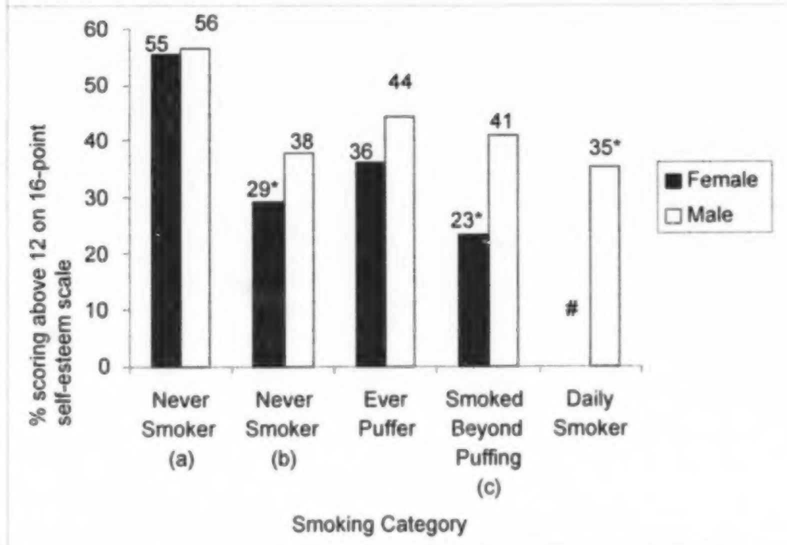
Among students who rated their academic performance as below average, the percentage who reported having ever tried cigars or pipes (32%) was higher than among students who rated their performance as average (14%) or better than average (9%) (data not shown).

Self Esteem

The YSS included a four-item measure from the General-Self Scale of the Marsh Self Description Questionnaire[3] to assess self esteem (see items in Table 3-13). For all individual items in the scale, a greater proportion of never smokers than ever smokers fully endorsed the item reflecting higher self-esteem (i.e., answered "true" rather than "mostly true", "sometimes true/sometimes false", "mostly false", or "false").

Half of YSS respondents (49%) scored above 12 on the16-point scale, where higher scores suggest higher self esteem. Figure 3-J describes the proportion of students who scored above 12 by smoking category and by sex. A higher proportion of students who were never smokers and had never seriously thought about smoking had self esteem scores above 12 than was the case in any other category. Never smokers who had seriously thought about smoking presented self esteem profiles more similar to smokers than to never smokers who had not seriously thought about smoking. A lower percentage of females scored above 12 (47%) than males (52%).

Figure 3-J
Self Esteem by Smoking Category and Sex, Canada, Youth Smoking Survey 2002

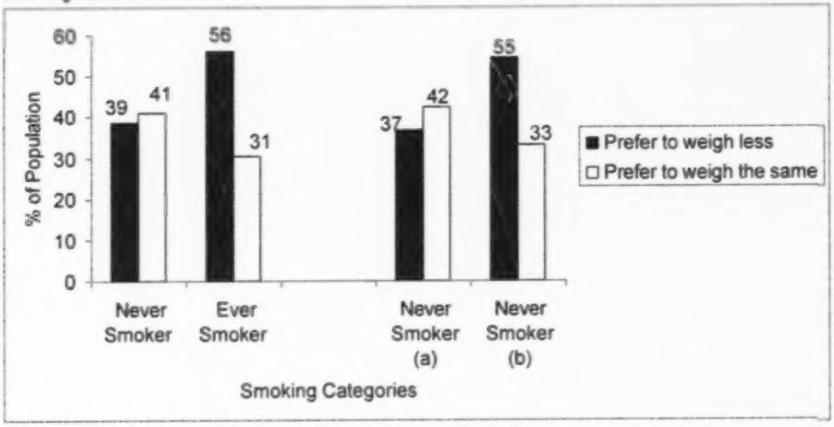


(a) Never Smoker who has Never Seriously Thought About Smoking
(b) Never Smoker who has Seriously Thought About Smoking
(c) Smoked Beyond Puffing, Not Daily Smoker
* Moderate sampling variability; interpret with caution
# Data suppressed due to high sampling variability

Preferred Weight

Preferred weight was not associated with smoking categories among male respondents (data not shown). However, a higher proportion of female ever smokers than never smokers reported they wanted to weigh less than they weigh now, and a lower proportion of female ever smokers than never smokers wanted to weigh the same as they weigh now (Figure 3-K). Further, female never smokers who had seriously thought about smoking were similar to ever smokers in their preference to weigh less.

Figure 3-K
Preferred Weight by Smoking Category, Females, Canada, Youth Smoking Survey 2002



(a) Never Smoker who has Never Seriously Thought About Smoking
(b) Never Smoker who has Seriously Thought About Smoking

Extracurricular Activities

Never smokers and ever smokers did not differ in reports of sports played and physical activities undertaken without a coach or instructor. They also did not differ in their reports of playing computer or video games (data not shown).

Higher proportions of never smokers than ever smokers reported participating in a wide range of organized activities, hobbies, and reading for fun (Table 3-A). A higher proportion of ever smokers than never smokers reported watching more television or videos and doing more odd jobs.

Table 3-A
Percentage of Ever and Never Smokers Participating In Extracurricular Activities, Canada, Youth Smoking Survey 2002

	Never Smoker %	Ever Smoker %
Pop. Est. ('000)	1,570	457
Sports with a coach or instructor other than in gym class once a week or more in the past year	61	54
Dance, gymnastics, karate or other groups or lessons, other than in gym class, once a week or more in the past year	38	32
Art, drama, or music groups, clubs, or lessons outside of class, once a week or more in the past year	33	23
Clubs or groups such as Guides or Scouts, 4-H clubs, community, church or other religious groups, once a week or more in the past year	23	15
Hobby or craft once a week or more in the past year	57	47
Read for fun a few times a week or more	64	41
Watch 3 or more hours of television or videos a day	48	56
Odd jobs (e.g. paper route, babysitting) once a week or more in the past year	36	44
No odd jobs in the past year	33	20

DISCUSSION

Prevalence

The remarkable decreases from 1994 to 2002 in the proportion of youth in grades 5-9 who had ever smoked even a few puffs, and who had ever smoked beyond puffing, represent a major public health success in Canada. Decreases in the proportion of ever smokers are robust, evident for both females and males, across grade levels, and in every province.

Rarely do we observe such favourable improvements in health behaviours in so short a time, and it is essential that we attempt to better understand the reasons underlying this success. One possible reason relates to the focus of Canada's tobacco control interventions. Contrasting with the more individualized approaches to tobacco control in previous decades, Canada has recently shifted its tobacco control efforts to include a greater emphasis on ecological and environmental interventions. Specifically, federal, provincial, and local legislative, regulatory, taxation, policy, and educational initiatives have promoted the social unacceptability of smoking, and restricted access to tobacco in a manner never before seen in Canada.

In spite of this success, major public health concerns continue to exist for the 23% (457,000) of Canadians in this young age group who had tried smoking, including 10% (208,000) who were puffers, 10% (212,000) who have smoked beyond puffing, not daily smokers, and 2% (36,000) who were daily smokers. As expected, smoking behaviours increased with higher grade levels, such that by grade 9 half of students had tried smoking (51%), and 26% had smoked beyond puffing. Five percent of grade 9 students were daily smokers.

While the proportion of ever smokers, puffers, and those who had smoked beyond puffing decreased between 1994 and 2002, the amount of cigarettes smoked per day among those who did smoke increased from 7.4 to 8.1. This increased consumption is of considerable concern because of increased daily exposure to nicotine and other dangerous carcinogenic substances in cigarettes. This increased exposure will likely translate into an earlier and more severe public health burden for many young Canadians who are daily smokers.

Because of their similarity to ever smokers, the 10% of never smokers who seriously thought about smoking might be signalling increased vulnerability to starting to smoke. Similar to ever smokers (and relative to never smokers who had never seriously thought about smoking), a lower proportion received high scores on a self-esteem measure, a lower proportion reported less than $10 each week to spend or to save, and among females, a higher proportion wanted to weigh less than they did currently.

Compared to 1994, a smaller proportion of never smokers in 2002 reported that it was easy for them to get cigarettes if they wanted to try smoking. The proportion varied with income available to spend or save; students who reported more accessible income also reported easier access to cigarettes.

Population Subgroups

Provincial differences in smoking behaviour described in this chapter are striking, and the relatively high prevalence of smoking in Quebec is particularly noteworthy. The identification of provincial differences does not explain what mix of cultural, environmental, educational, legislative, and policy variables created such differences in smoking patterns. It does call for the careful analysis of policies and practices in legislation, regulation, education, and message promotion that are related to differing provincial outcomes, but within the cultural and political context that is unique to each province.

As in 1994, females and males had remarkably similar smoking patterns. An important exception, also apparent in the 1994 data, was that females who smoked, smoked fewer cigarettes per day than males who smoked (e.g., 7.3 per day for female daily smokers and 8.8 per day for male daily smokers). In addition, a lower proportion of females compared to males had high self esteem scores, a variable associated with smoking categories. Also, an association between smoking category and preferences for weighing less than they currently did was apparent for females only. This latter finding supports earlier work documenting links between females' smoking behaviour and concerns about weight, including longitudinal studies suggesting that concern about weight predicts smoking initiation one year later[4,5]. The current findings emphasise the relevance of this issue even among female never smokers, and in particular, those who have seriously thought about smoking.

Minority language status has been suggested to be protective against tobacco use among youth in the United States[6]. The findings of the YSS are consistent with this hypothesis. While Francophones were much more likely than Anglophones to report being ever smokers, this applied only to Francophones living in Quebec. These results must be interpreted with caution given the small number of Francophones living outside Quebec in the sample, but they confirm that language ought not to be considered in isolation of other factors in attempts to understand the determinants of youth smoking behaviour.

Because of the small sample size of specific Aboriginal groups, data from North American Indian, Métis, and Inuit were collapsed for this analysis. Such merging of data can mask distinctions in patterns of smoking behaviours in the three groups. As in 1994, higher proportions of Aboriginal than non-Aboriginal youth engaged in smoking behaviour in 2002 and this disparity is of concern. The findings of substantial decreases since 1994 in the proportions of Aboriginal youth who engaged in smoking represent an important and encouraging public health success.

Our main proxy for socioeconomic status—parental education—reveals an exceptionally strong association with smoking behaviour. The percentage of youth who were ever smokers and whose parents reported attaining less than secondary school graduation (36%) was more than twice that of youth whose parents reported attaining a university degree (16%). This disparity merits attention. The significance of socioeconomic status as a determinant of health, and its link with an array of health behaviours, has been well established[7]; these findings confirm such a link with smoking behaviours even among very young Canadians.

The finding that higher weekly student income was strongly related to increased smoking is intriguing. Does increased income buy greater access to cigarettes? Are students who obtain more money engaged in work or other settings where cigarettes are more available, or where smoking is more normative? Might parents' reduction of cash available to youth make cigarettes less available to them? Unlike the 1994 YSS, the 2002 YSS did not gather information about the number of hours of paid employment among respondents, although we do know that a higher proportion of ever smokers than never smokers reported doing odd jobs in the past year. We do not know the source of weekly income reported by students.

As a group, ever smokers consistently reported lower participation in a range of organized activities, including sports with a coach or instructor; dance, gymnastics or other groups or lessons outside of gym class; art, drama, or music clubs or lessons outside of class, and clubs or groups such as Guides or Scouts, community or religious groups. Reasons for this lower participation are unclear, but might relate to lower socioeconomic status among youth who smoke, with reduced access to fee-bearing activities. Alternatively, this might relate to a lower inclination among ever smokers to participate in organized activities. The possibility that organized activities serve as a protective factor against smoking initiation merits consideration.

Although a lower proportion of ever smokers participated in organized activities, never smokers and ever smokers did not differ in reports of sports or physical activity played without a coach or instructor. Ever smokers watched television or videos more frequently than never smokers, but did not differ in time spent playing computer or video games. Never smokers were more likely to spend time reading. In short, the possibility of linkages between sedentary behaviour and smoking is unresolved.

Implications for Regulatory, Legislative, and Educational Initiatives

There have been many changes since the 1994 YSS in tobacco control activities in Canada, including the introduction of new health warning messages on cigarette packages (1994 and 2000), the enforcement of new federal tobacco legislation through the *Tobacco Act (1997)*, and the launch of three federal tobacco strategies-- the Tobacco Demand Reduction Strategy (TDRS, 1994-1997), the Tobacco Control Initiative (TCI, 1997-2002), and the Federal Tobacco Control Strategy (FTCS, 2001). These have been accompanied by numerous provincial and territorial strategies, often involving regulatory and legislative initiatives as part of a comprehensive tobacco control program. See Chapter 1 for a listing of provincial / territorial strategies.

The *Tobacco Act*, passed in 1997, aims to protect the health of Canadians in light of conclusive evidence implicating tobacco use in the incidence of numerous debilitating and fatal diseases; to protect young persons (under 18 years of age) and others from inducements to use tobacco products and the consequent dependence on them; to protect the health of young persons by restricting access to tobacco products; and to enhance public awareness of the health hazards of using tobacco products.

Health Warning Messages (HWMs) were placed on tobacco products according to the *Act*, to enhance public awareness of the health hazards of using tobacco products. From 1994 to 2000 text HWMs were placed on cigarette packages. After 2000, 16 graphic and larger HWMs were introduced. Since their implementation, the impact of the HWMs has been regularly monitored and evaluated among youth 12 to 18 years old[8]. Results indicate that the HWMs are an effective vehicle for communicating with youth. Young smokers report that these messages inform them of the health effects of smoking, get them to smoke less around others than they used to, increase the desire to quit, get them to try to quit and also to try to smoke less. Potential smokers (those who have tried smoking, have seriously thought about smoking, or think they might try smoking in the next month) report that they perceive HWMs to be accurate, to provide them with important information about the health effects of smoking, and to make smoking less attractive.

More specifically, the *Act* prohibits tobacco products from being furnished to a young person in a public place or in a place to which the public reasonably has access. It also requires retailers to post signs that inform the public that the sale or giving of a tobacco product to a young person is prohibited by law. Health Canada tobacco inspectors work with individuals and retailers in order to reduce youth access to tobacco. In accordance with the *Act*, some of their tasks include ensuring retailer compliance with posting signs stating the legal age for purchasing tobacco, requesting ID from anyone who, appearing to be under the legal age, attempts to buy tobacco, ensuring that retailers do not sell single cigarettes or cigarettes in packages of less than 20 cigarettes, and ensuring that retailers are respecting the restrictions regarding tobacco promotions.

In 1998, an amendment to the *Act* was passed which set in motion a five-year plan to phase-in a ban of tobacco company sponsorship promotions including those associated with cultural and sporting events. The complete ban came into effect on 1 October, 2003.

Most provinces, territories and more than 300 Canadian municipalities and regional governments now have some form of non-smoking legislation or bylaw[9]. Smoking restrictions contribute to the social unacceptability of tobacco products and use, limit exposure to second hand smoke, and play a role in preventing youth from taking up smoking and limiting the availability of places where they can go to smoke. The knowledge of school smoking bans and their impact on youth smoking behaviour was measured in this survey and the findings were reported in Chapter 10.

Higher prices are a recognized deterrent to tobacco use. Evidence demonstrates that effective and sustainable tobacco tax policies can significantly contribute to reducing the consumption of tobacco products, particularly among youth. Between administrations of the YSS in 1994—months after dramatic cuts to federal tobacco taxes and to provincial taxes in five province—and in 2002, taxes rose federally and in every province.[10, 11] A joint federal, provincial and territorial strategy for increasing taxation has been in place since 2001; taxes rose in every province in 2002.

Keys to continuing the trend toward decreasing youth tobacco use include a diverse array of public education (information, mass media, programs and services), research, legislative, policy, and programmatic strategies developed and coordinated at the local, provincial/territorial, national and international levels. Establishing comprehensive and integrated efforts hinges on forging collaboration at all levels.

Implications for Future Monitoring and Further Research

Compared to Canadians aged 15 years and older, reliable data on smoking prevalence among younger Canadians are sparse; this is especially true for adolescents in grades 5-9, who are particularly vulnerable to initiating smoking. The 1994 YSS was the first comprehensive national survey to address smoking behaviours and attitudes among youth aged 10 to 19 years. The 2002 survey of grade 5-9 students has updated this knowledge base. Continued monitoring of tobacco use patterns in youth through the YSS in future years will provide ongoing pertinent, detailed information about smoking behaviour, attitudes, and beliefs of Canadian youth.

Research is required to increase understanding of the dramatic decline in youth smoking prevalence between 1994 and 2002. The lessons to be learned will have implications not only in tobacco control but across all areas of public health. In particular, how have legislative, regulatory, and policy shifts affected smoking in youth? More broadly, in what ways have the comprehensive ecological and environmental interventions contributed to such change? What is required to ensure sustainability of gains to date, as well as continued progress?

How do we best make sense of substantial provincial differences in smoking behavior, and in rates of progress in tobacco control? What mix of legislative, regulatory, policy, and educational initiatives has the greatest impact on smoking, and how does such a mix relate to the specific social, cultural, economic, and political characteristics of a province and its population?

The 2002 YSS findings document progress in reducing cigarette smoking by youth in Quebec as well as in all other provinces. However the substantial differences in tobacco use among Quebec youth and those in other provinces need to be explored. Are school and other policies different in Quebec compared to other provinces? Are cultural differences a factor? What is behind the higher prevalence of smoking for Francophone youth in Quebec? Are there impediments to the transmission of effective health promotion and smoking prevention messages to Quebec youth?

What lessons can be learned from declines in the proportion of ever smokers among Aboriginal youth between 1994 and 2002? What was the ecological and environmental mix which contributed to reduced smoking, and what can be done to reduce the ongoing disparity in smoking between Aboriginal and non-Aboriginal youth?

One of the most challenging findings in the 2002 survey was the increase since 1994 in the reported mean number of cigarettes smoked per day among daily smokers (from 7.4 to 8.1). Further monitoring will be crucial to confirm whether the 2002 finding is anomalous or whether it represents a trend among young daily smokers. In the meantime, developing a plan for focused research into the influences underlying this observation is warranted so research can inform, in a timely manner, the design, implementation, and evaluation of intervention strategies to reduce smoking among young daily smokers.

We need to better understand never smokers who have seriously thought about smoking. On several measures these youth have more in common with ever smokers than with other never smokers. In what manner, and through what targeted interventions, can their vulnerability to smoking initiation be addressed most effectively?

Males who smoke, smoke more than females who smoke. What are the factors associated with this difference? Are sex-specific interventions required so that young male smokers' increased risk of health problems due to tobacco use can be effectively addressed?

Research is required to better understand how concerns about weight relate to smoking among girls. A comprehensive research agenda is required, one that considers weight within the contexts of girls' personal and social realities, including self esteem and relationships with peers and within families.

Adequate understanding of youth smoking behaviour is impossible without attention to the implications of socioeconomic status. What are the mechanisms by which parental education and household income are so strongly associated with young Canadians' smoking behaviours? What policy and programme initiatives are required if Canada is to reduce the health risks from tobacco use which now disproportionately fall on its low-income young citizens?

The roles of student income, engagement in organized activities, and sedentary lifestyles in youth smoking behaviour all merit research attention. Understanding the mechanisms by which these factors are and are not associated with tobacco use may suggest smoking control interventions available to families, schools, and communities.

In addition to providing benchmark data on national prevalence of smoking, the YSS offers a detailed snapshot of purchasing behaviour (Chapter 9) and knowledge of health risks (Chapter 8). It also provides a unique opportunity to advance our knowledge of the psychosocial correlates of smoking initiation and behaviour including correlates of cessation (Chapter 4). The collection of data from parents at the same time as youth is also unique in a national smoking survey and will help in the investigation of social influences on youth smoking behaviour (Chapter 5). This information is critical to assessing the need for increased legislative controls on tobacco, bolstering public support for these policy options, and gauging the effectiveness of tobacco control efforts.

Given the changes that have been observed over the last eight years, it is important to continue monitoring smoking behaviours in this group of young people. Results from this and future surveys will help develop and guide strategies to prevent or reduce smoking and inform analysts of tobacco policy. They will also serve as an education tool for parents and educators and enable the evaluation of the impact of prevention and control measures. They will also advance our understanding of the psychosocial and environmental influences on smoking in young Canadians.

Limitations

As previously noted in this chapter, and as discussed in Chapter 2, we describe here the association between smoking behaviours and selected variables of interest. However, conclusions regarding causation cannot be drawn from YSS data. Further, when large numbers of possible associations are tested, as was the case in this chapter, there is increased risk that associations may be identified which are the result of chance rather than a reflection of real associations in the population. The large sample size in the YSS also means that even modest associations can be found to be statistically significant; whether such findings are of practical importance is a different matter.

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Table 3-1
Amount Smoked in the Last 30 Days on Days When Smoking Occurred, Canada, Youth Smoking Survey 2002 and 1994

	Cigarettes Smoked On Days When Smoking Occurred			Number Of Days Smoked In Last 30				
	<5 cigs	6-20 cig	>20 cigs	1-5 days	6-10 days	11-20 days	21-29 days	30 days
2002	61.7	27.6	10.7	43.5	10.5	13.5	8.1	24.5
1994	62.9	25.9	11.2	39.6	15.1	13.8	15.3	16.2

Percentages may not add to 100 due to rounding

Table 3-2a
Prevalence of Ever Use of Tobacco Products Other than Cigarettes, by Sex and by Grade, Canada, Youth Smoking Survey 2002

2002		Pop. Est ('000)	Cigars or Pipes (%)	Chewing Tobacco (%)	Snuff (%)	Bidis (%)
Grade	**Total**	**2,028**	**13.3**	**2.1**	**2.2**	**2.5**
	Females	988	11.0	#	1.7	2.3
	Males	1039	15.4	3.2	2.8	2.7
5		397	3.5	#	2.2*	#
6		406	6.2	1.1*	1.5*	1.1*
7		425	12.3	2.4*	1.9*	2.3*
8		404	18.5	2.5*	2.7	3.8
9		396	26.2	4.2	2.9	5.1

* Moderate sampling variability; interpret with caution
# Data suppressed due to high sampling variability

Table 3-2b
Prevalence of Ever Use of Tobacco Products Other than Cigarettes, by Sex and by Grade, Canada, Youth Smoking Survey 1994

1994		Pop. Est ('000)	Cigars or Pipes (%)	Chewing Tobacco (%)	Snuff (%)	Bidis (%)
Grade	**Total**	**1,949**	**20.0**	**7.0**	**3.5**	-
	Females	953	16.1	3.2	2.3*	-
	Males	997	23.6	10.7	4.6	-
5		326	7.1	1.9*	2.3*	-
6		422	12.9	4.6*	2.1*	-
7		392	19.2	6.5	3.0*	-
8		401	27.7	9.5	5.7*	-
9		409	30.6	11.6	4.2*	-

* Moderate sampling variability; interpret with caution
- Data not available

Table 3-3a

Percentage of Never Smokers Who Might Try Smoking in Next Month, by Grade and Sex, Canada, Youth Smoking Survey 2002

2002	Pop.	Yes might try		Don't know		No	
Grade	Est. ('000)	Females %	Males %	Females %	Males %	Females %	Males %
All grades: Females & Males combined	**1,560**	**0.3***		**5.7**		**93.9**	
All grades	1,560	0.3*	0.4*	6.3	5.2	93.4	94.4
5	366	#	#	2.9	4.2	96.9	95.7
6	358	#	#	4.4	3.1	95.4	96.4
7	334	#	#	6.3	7.2	93.5	92.5
8	273	#	#	10.5	6.9	89.0	92.5
9	229	#	#	10.0	5.1	89.6	94.7

* Moderate sampling variability; interpret with caution

# Data suppressed due to high sampling variability

Table 3-3b

Percentage of Never Smokers who Might Try Smoking in Next Month, by Grade and Sex, Canada, Youth Smoking Survey 1994

1994	Pop.	Yes might try		Don't know		No	
Grade	Est. ('000)	Females %	Males %	Females %	Males %	Females %	Males %
All grades: Females & Males combined	**1,160**	**#**		**8.3**		**91.2**	
All grades	1,160	#	0.6*	8.9	7.7	90.5	91.8
5	273	#	#	6.5*	5.8*	93.5	94.1
6	310	#	#	5.7*	7.2*	94.1	92.5
7	234	#	#	11.7	10.1	87.3	89.5
8	179	#	#	12.3	5.5*	86.5	93.4
9	164	#	#	11.6*	11.3*	87.4	88.2

* Moderate sampling variability; interpret with caution

# Data suppressed due to high sampling variability

Table 3-4
Perceived Easy Access to Cigarettes among Never Smokers by Province, Canada, Youth Smoking Survey 2002 and 1994

	Pop. Est. ('000)	2002 %	Pop. Est. ('000)	1994 %
Canada	**1,557**	**17.4**	**1,159**	**24.0**
NL	24	20.8	25	29.5
PE	8	18.4	6	21.5
NS	47	19.1	40	26.0
NB	37	17.2	32	22.6
QC	304	22.8	251	28.3
ON	640	15.7	453	22.1
MB	60	12.2	44	22.3
SK	50	15.5	42	20.4
AB	176	13.8	122	21.9
BC	210	19.4	145	24.8

Table 3-5a
Smoking Category by Province and Grade, Canada, Youth Smoking Survey 2002

2002 Grade	Pop. Est. ('000)	Never Smoker (a) %	Never Smoker (b) %	Puffer %	Smoked Beyond Puffing (c) %	Daily Smoker %
Canada, 5-9	**2,021**	**69.1**	**8.3**	**10.3**	**10.5**	**1.8**
5	395	86.1	7.1	5.1	1.6*	#
6	404	81.9	7.1	6.4	4.4	#
7	424	70.3	8.5	10.5	9.5	1.3*
8	403	58.2	9.6	13.6	16.0	2.7
9	395	48.9	9.1	16.2	21.0	4.8
NL, 5-9	**34**	**65.3**	**7.5**	**11.2**	**12.3**	**3.7***
5	6	88.5	#	#	#	#
6	6	82.9	#	#	#	#
7	7	70.3	11.5*	10.4*	#	#
8	7	53.0	#	18.8	17.0*	#
9	7	36.8	#	12.3*	30.9	13.0*
PE, 5-9	**10**	**74.7**	**7.2**	**7.5**	**8.6**	**#**
5	2	89.8	#	#	#	#
6	2	87.5	#	#	#	#
7	2	78.2	#	#	#	#
8	2	62.5	#	#	15.9*	#
9	2	56.5	#	12.8*	19.6*	#
NS, 5-9	**61**	**67.9**	**7.8**	**10.0**	**12.0**	**2.3***
5	11	91.0	#	#	#	#
6	12	84.3	#	#	#	#
7	13	68.1	9.4*	11.5*	10.6*	#
8	13	51.5	9.0*	13.5	22.7	#
9	12	47.2	#	16.8	19.9	#
NB, 5-9	**49**	**68.4**	**8.0**	**10.3**	**10.5**	**2.8***
5	9	84.2	#	#	#	#
6	9	81.0	#	#	#	#
7	10	68.8	#	12.0*	10.1*	#
8	10	54.1	13.0*	15.3*	16.2	#
9	11	56.0	#	11.4*	17.9	9.7*
QC, 5-9	**486**	**54.6**	**8.3**	**13.9**	**18.8**	**4.4**
5	96	77.7	9.5	9.2	#	#
6	97	70.2	9.0	9.6	10.8	#
7	111	50.4	9.1	15.9	20.8	#
8	97	41.8	7.0*	16.5	27.0	7.7*
9	85	31.1	6.6*	18.6	33.0	10.6

ON, 5-9		**768**	**74.4**	**9.4**	**8.5**	**7.3**	#
	5	154	88.7	7.6*	#	#	#
	6	156	85.5	7.5*	#	#	#
	7	157	79.3	8.4*	8.4*	#	#
	8	151	62.8	11.8	12.5	12.3	#
	9	151	54.6	11.6*	15.2	17.4	#
MB, 5-9		**76**	**72.1**	**7.4**	**10.1**	**8.7**	#
	5	14	88.7	#	#	#	#
	6	14	87.1	#	#	#	#
	7	15	75.8	#	10.3*	#	#
	8	16	59.3	#	15.7*	14.3*	#
	9	16	52.4	10.4*	13.3*	17.8*	#
SK, 5-9		**67**	**68.4**	**6.2**	**13.8**	**9.7**	#
	5	13	88.1	#	#	#	#
	6	13	77.2	#	12.0*	#	#
	7	14	69.4	#	12.0*	#	#
	8	14	61.5	#	17.8	12.6*	#
	9	14	48.2	#	21.5	18.8	#
AB, 5-9		**219**	**73.9**	**6.6**	**10.4**	**7.7**	#
	5	42	85.8	#	#	#	#
	6	44	87.6	#	#	#	#
	7	45	78.4	#	#	#	#
	8	45	65.8	#	12.9*	11.5*	#
	9	43	52.4	#	16.0	18.8	#
BC, 5-9		**251**	**76.9**	**7.5**	**8.0**	**6.7**	#
	5	48	92.0	#	#	#	#
	6	50	88.0	#	#	#	#
	7	50	78.0	8.2*	7.7*	#	#
	8	50	71.0	9.0*	9.0*	9.5*	#
	9	53	57.5	8.9*	16.1	14.8	#

(a) Never Smoker who has Never Seriously Thought About Smoking
(b) Never Smoker who has Seriously Thought About Smoking
(c) Smoked Beyond Puffing, Not Daily Smoker
* Moderate sampling variability; interpret with caution
# Data suppressed due to high sampling variability

Table 3-5b
Smoking Category by Province and Grade, Canada, Youth Smoking Survey 1994

1994 Grade	Pop. Est. ('000)	Never Smoker (a) %	Never Smoker (b) %	Puffer %	Smoked Beyond Puffing (c) %	Daily Smoker %
Canada, 5-9	**1,944**	**50.5**	**9.0**	**13.9**	**22.1**	**4.5**
5	324	75.1	8.9	9.7	6.1*	#
6	420	64.3	9.4	13.5	12.0	#
7	391	49.7	10.0	14.4	22.4	3.4*
8	401	35.7	9.0	15.7	31.7	8.0
9	408	32.1	7.9	15.4	35.5	9.1
NL, 5-9	**45**	**46.4**	**10.0**	**13.1**	**24.3**	**6.2**
5	7	78.4	#	#	#	#
6	8	66.6	11.7*	12.0*	#	#
7	9	44.0	14.4*	15.5*	23.0	#
8	10	35.0	#	15.7*	34.8	#
9	11	24.1	#	13.6*	40.0	16.0*
PE, 5-9	**10**	**52.8**	**8.6**	**14.8**	**20.2**	**3.6***
5	1	76.9	#	#	#	#
6	2	66.6	10.6*	15.0*	#	#
7	2	53.8	11.2*	17.4*	16.4*	#
8	2	37.7	#	14.5*	32.0	#
9	2	35.1	#	17.7*	37.1	#
NS, 5-9	**62**	**52.8**	**11.4**	**11.1**	**19.6**	**5.1**
5	13	70.8	13.7*	#	#	#
6	12	60.0	11.4*	12.6*	15.5*	#
7	13	49.9	14.4*	10.3*	21.0	#
8	12	43.6	10.4*	14.1*	23.2	#
9	12	38.1	#	#	32.8	#
NB, 5-9	**52**	**54.0**	**8.8**	**12.3**	**21.3**	**3.7***
5	7	80.6	#	#	#	#
6	11	70.2	8.6*	12.5*	8.7*	#
7	12	51.9	12.5*	14.6*	18.4*	#
8	9	44.8	#	10.8*	28.5	#
9	12	32.1	#	13.3*	40.5	#
QC, 5-9	**477**	**45.9**	**6.5**	**12.8**	**27.5**	**7.3**
5	103	73.4	#	11.1*	#	#
6	88	58.2	#	14.9*	17.9*	#
7	100	43.4	#	14.5*	29.1	#
8	102	28.3	#	12.2*	39.4	15.3*
9	84	23.9	#	11.3*	43.5	12.4*

ON, 5-9		**710**	**53.6**	**10.0**	**14.8**	**19.2**	**#**
	5	93	76.6	#	#	#	#
	6	174	67.7	9.8*	12.2*	#	#
	7	132	54.7	12.1*	12.9*	20.2*	#
	8	154	40.2	10.2*	18.7	26.9	#
	9	157	36.7	#	18.8*	31.0	#
MB, 5-9		**75**	**50.6**	**8.0**	**14.9**	**22.3**	**4.1***
	5	12	80.7	#	#	#	#
	6	14	66.8	#	17.5*	#	#
	7	18	43.3	#	20.4	25.1	#
	8	15	30.8	10.9*	15.4*	35.6	#
	9	16	40.8	#	#	35.4	#
SK, 5-9		**76**	**47.0**	**8.4**	**15.6**	**25.2**	***3.9**
	5	13	69.2	#	#	#	#
	6	17	59.4	#	15.8*	15.1*	#
	7	16	47.3	10.6*	19.9*	21.4	#
	8	15	31.6	#	18.9*	36.2	#
	9	16	29.7	#	11.1*	41.4	#
AB, 5-9		**201**	**50.6**	**9.9**	**14.0**	**20.9**	**4.6***
	5	34	73.4	#	#	#	#
	6	50	63.2	#	13.2*	13.2*	#
	7	42	46.2	11.2*	17.6*	21.2	#
	8	35	38.0	10.6*	14.0	29.6	#
	9	40	31.0	#	15.0	34.5	11.4*
BC, 5-9		**237**	**50.8**	**10.2**	**13.9**	**20.2**	**5.0**
	5	40	77.9	#	#	#	#
	6	44	64.7	10.4*	15.0*	9.4*	#
	7	48	55.9	10.8*	12.6*	17.0*	#
	8	47	34.3	12.0*	15.3*	31.4	#
	9	58	30.6	#	16.3*	33.5	10.6*

(a) Never Smoker who has Never Seriously Thought About Smoking
(b) Never Smoker who has Seriously Thought About Smoking
(c) Smoked Beyond Puffing, Not Daily Smoker
* Moderate sampling variability; interpret with caution
# Data suppressed due to high sampling variability

Table 3-6a
Smoking Category by Sex and Grade, Canada, Youth Smoking Survey 2002

2002 Grade	Pop. Est. ('000)	Never Smoker (a) %	Never Smoker (b) %	Puffer %	Smoked Beyond Puffing (c) %	Daily Smoker %
Females, 5-9	**985**	**69.3**	**8.1**	**9.6**	**11.1**	**1.9**
5	194	88.2	6.4	4.0*	#	#
6	198	82.5	7.1	5.7	4.6*	#
7	205	72.5	7.6	9.2	9.6	#
8	196	54.7	9.5	13.6	19.3	2.9*
9	192	48.0	10.2	15.6	21.1	5.2*
Males, 5-9	**1,036**	**69.0**	**8.4**	**11.0**	**9.9**	**1.7**
5	201	84.0	7.7	6.1	2.1*	#
6	206	81.4	7.1	7.0	4.2*	#
7	219	68.2	9.3	11.7	9.5	#
8	207	61.5	9.7	13.5	12.9	2.5*
9	202	49.7	8.2	16.7	20.9	4.5*

(a) Never Smoker who has Never Seriously Thought About Smoking
(b) Never Smoker who has Seriously Thought About Smoking
(c) Smoked Beyond Puffing, Not Daily Smoker
* Moderate sampling variability; interpret with caution
# Data suppressed due to high sampling variability

Table 3-6b
Smoking Category by Sex and Grade, Canada, Youth Smoking Survey 1994

1994 Grade	Pop. Est. ('000)	Never Smoker (a) %	Never Smoker (b) %	Puffer %	Smoked Beyond Puffing (c) %	Daily Smoker %
Females, 5-9	**951**	**50.3**	**9.7**	**13.1**	**22.1**	**4.9**
5	152	77.5	11.2*	7.4*	#	#
6	204	67.5	8.5*	13.5	9.8*	#
7	189	50.8	11.1*	14.1	20.1	3.9*
8	199	31.5	10.1*	16.0	34.1	8.3*
9	207	30.9	7.9*	13.1	38.1	10.1*
Males, 5-9	**993**	**50.7**	**8.4**	**14.7**	**22.1**	**4.1**
5	172	73.0	6.9*	11.7*	8.3*	#
6	216	61.3	10.1*	13.6	14.0	#
7	203	48.7	9.0*	14.7	24.6	#
8	201	39.8	7.8*	15.5	29.3	7.7*
9	202	33.3	10.0*	17.8	32.7	8.2*

(a) Never Smoker who has Never Seriously Thought About Smoking
(b) Never Smoker who has Seriously Thought About Smoking
(c) Smoked Beyond Puffing, Not Daily Smoker
* Moderate sampling variability; interpret with caution
# Data suppressed due to high sampling variability

Table 3-7

Mean Number of Cigarettes Smoked Per Day in Last 7 Days – By Those Who Reported Any Smoking in Last 7 Days - by Province, Canada, Youth Smoking Survey 2002 and 1994

	2002	1994
Canada	**4.2**	**3.9**
NL	5.2	4.0
PE	5.1	3.7
NS	4.4	3.5
NB	5.7	3.6
QC	5.0	5.2
ON	1.5	2.7
MB	4.3	2.8
SK	3.7	3.8
AB	4.0	3.6
BC	3.5	3.6

Table 3-8a

Ever Used Other Tobacco Products, by Province, Canada, Youth Smoking Survey 2002

1994	Pop. Est. ('000)	Cigars or Pipes (%)	Chewing Tobacco (%)	Snuff (%)	Bidis (%)
Canada	**2,028**	**13.3**	**2.1**	**2.2**	**2.5**
NL	34	13.0	#	#	#
PE	10	9.6	3.5*	#	#
NS	62	11.9	2.7*	#	#
NB	45	12.6	2.1*	2.5*	1.9*
QC	487	24.1	2.0*	5.9	7.6
ON	771	8.9	#	#	#
MB	76	11.2	2.2*	#	#
SK	68	14.1	6.1	#	#
AB	219	10.7	3.9*	#	#
BC	252	9.3	2.9*	#	#

* Moderate sampling variability; interpret with caution

# Data suppressed due to high sampling variability

Table 3-8b

Ever Used Other Tobacco Products, by Province, Canada, Youth Smoking Survey 1994

1994	Pop. Est. ('000)	Cigars or Pipes (%)	Chewing Tobacco (%)	Snuff (%)	Bidis (%)
Canada	**1,949**	**20.0**	**7.0**	**3.5**	-
NL	45	20.0	4.6	#	-
PE	10	18.5	4.4*	#	-
NS	62	18.6	6.1	#	-
NB	52	19.1	6.0	4.7*	
QC	478	21.2	4.4*	8.2	-
ON	712	17.6	4.4*	#	-
MB	75	21.9	7.5	2.5*	-
SK	77	25.3	20.1	4.8*	-
AB	202	23.2	16.3	3.7*	-
BC	238	20.1	8.5	#	-

* Moderate sampling variability; interpret with caution

# Data suppressed due to high sampling variability

- Data not available

Table 3-9a
Smoking Category by Language Usually Spoken at Home and Grade, Canada, Youth Smoking Survey 2002

2002 Grade	Pop. Est. ('000)	Never Smoker (a) %	Never Smoker (b) %	Puffer %	Smoked Beyond Puffing (c) %	Daily Smoker %
Canada, 5-9	**2,028**	**69.1**	**8.4**	**10.3**	**10.5**	**1.8**
5	397	86.1	7.1	5.1	1.6*	#
6	406	81.9	7.1	6.4	4.4	#
7	425	70.3	8.5	10.5	9.5	1.3*
8	404	58.2	9.6	13.6	16.0	2.7
9	396	48.9	9.1	16.2	21.0	4.9
English, 5-9	**1,373**	**73.4**	**8.3**	**8.9**	**8.2**	**1.1**
5	258	89.0	5.7	4.0	1.0*	#
6	290	85.2	6.6	5.4	2.7*	#
7	278	76.3	9.1	8.2	6.0	#
8	280	63.5	10.4	11.5	13.7	1.0*
9	267	53.0	9.7	15.7	17.7	3.9
French, 5-9	**396**	**53.1**	**7.5**	**14.4**	**20.0**	**5.0**
5	80	77.5	9.1*	9.6*	#	#
6	71	69.3	7.1*	10.5*	12.4*	#
7	91	48.2	8.8*	15.5	23.3	#
8	79	40.5	6.9*	18.3	25.3	9.0*
9	74	31.1	#	17.8	35.2	11.1*
Both English & French, 5-9	**77**	**58.1**	**7.6***	**16.1**	**16.4**	**#**
5	12	69.1	#	#	#	#
6	16	81.3	#	#	#	#
7	17	64.6	#	#	#	#
8	15	45.2	#	#	25.8*	#
9	17	33.0	#	#	33.9*	#
Other, 5-9	**172**	**78.3**	**8.3**	**8.9**	**4.4***	**#**
5	44	92.5	#	#	#	#
6	26	80.6	#	#	#	#
7	37	83.9	#	#	#	#
8	29	70.2	#	#	#	#
9	36	59.6	#	#	13.1*	#
French in Quebec, 5-9	**380**	**52.3**	**7.6**	**14.6**	**20.3**	**5.2**
5	78	77.3	9.3*	9.5	#	#
6	68	68.3	7.2*	10.9*	12.8*	#
7	90	47.6	8.9*	15.5	23.7	#
8	77	39.6	6.6*	18.6	25.8	9.4*
9	67	27.9	5.4*	18.5	36.2	12.1*
French outside Quebec, 5-9	**16**	**72.8**	**4.4**	**8.8**	**13.4**	**#**
5	2	84.8	#	#	#	#
6	3	90.8	#	#	#	#
7	2	84.8	#	#	#	#
8	3	65.9	#	#	#	#

9	7	61.8	#	#	#	#
English in Quebec, 5-9	**44**	**68.7**	**14.0**	#	#	#
5	6	#	#	#	#	#
6	15	#	#	#	#	#
7	8	#	#	#	#	#
8	8	#	#	#	#	#
9	7	#	#	#	#	#
English outside of Quebec, 5-9	**1,329**	**73.6**	**8.1**	**9.0**	**8.2**	**1.1**
5	252	89.0	5.7	4.0	0.1	#
6	275	85.5	6.1	5.6	2.8	#
7	270	76.2	9.0	8.4	6.1	#
8	272	63.9	10.3	11.4	13.3	1.1
9	260	53.4	9.4	15.6	17.9	3.8

(a) Never Smoker who has Never Seriously Thought About Smoking
(b) Never Smoker who has Seriously Thought About Smoking
(c) Smoked Beyond Puffing, Not Daily Smoker
* Moderate sampling variability; interpret with caution
# Data suppressed due to high sampling variability

Table 3-9b
Smoking Category by Language Usually Spoken at Home and Grade, Canada, Youth Smoking Survey 1994

2002 Grade	Pop. Est. ('000)	Never Smoker (a) %	Never Smoker (b) %	Puffer %	Smoked Beyond Puffing (c) %	Daily Smoker %
Canada, 5-9	**1,942**	**50.5**	**9.1**	**13.9**	**22.1**	**4.4**
5	322	75.2	9.0	9.5	6.2*	#
6	421	64.3	9.4	13.5	12.0	#
7	391	49.7	10.0	14.4	22.5	3.4*
8	400	35.8	9.0	15.7	31.7	7.9
9	408	32.1	7.9	15.4	35.5	9.1
English, 5-9	**1,342**	**51.1**	**10.2**	**14.1**	**20.9**	**3.7**
5	203	74.2	11.6	9.0*	5.0*	#
6	305	64.9	9.6	13.7	11.0	#
7	269	51.9	11.0	14.6	20.3	#
8	274	38.2	10.8	16.4	29.1	5.5*
9	291	32.0	8.6	15.6	35.0	8.8
French, 5-9	**398**	**45.8**	**4.8***	**12.3**	**29.5**	**7.7**
5	84	76.4	#	9.9*	9.0*	#
6	72	57.1	#	15.2*	19.6*	#
7	78	45.2	#	12.4*	31.0	#
8	86	25.2	#	11.2*	43.5	17.2
9	78	25.5	#	13.1*	43.9	12.1*
Both English & French, 5-9	**69**	**46.0**	**10.6***	**16.6***	**21.2***	**#**
5	16	61.2	#	#	#	#
6	11	50.9*	#	#	#	#
7	20	42.2*	#	#	#	#
8	9	#	#	#	#	#
9	13	#	#	#	#	#
Other, 5-9	**127**	**61.4**	**9.2***	**15.0***	**13.0***	**#**
5	17	94.1	#	#	#	#
6	31	79.5	#	#	#	#
7	23	45.8*	#	#	#	#
8	29	48.2	#	21.7*	22.2*	#
9	26	46.8*	#	#	#	#
French in Quebec, 5-9	**370**	**45.4**	**4.7**	**12.1**	**29.7**	**8.1**
5	79	76.9	#	#	#	#
6	69	55.8	#	15.5*	20.4*	#
7	75	44.4	#	12.1*	31.9	#
8	82	24.5	#	#	43.7	18.0*
9	65	23.5*	#	13.6*	44.1	#
French outside Quebec, 5-9	**28**	**50.1**	**#**	**#**	**27.6***	**#**
5	5	67.9*	#	#	#	#
6	3	87.3*	#	#	#	#
7	3	#	#	#	#	#
8	4	#	#	#	#	#
9	13	35.4*	#	#	42.5*	#
English in	**56**	**50.5**	**15.9***	**12.1***	**20.0***	**#**

Quebec, 5-9						
5	13	#	#	#	#	#
6	7	#	#	#	#	#
7	12	#	#	#	#	#
8	13	#	#	#	#	#
9	11	#	#	#	#	#
English outside of Quebec, 5-9	**1,287**	**51.1**	**10.0**	**14.2**	**20.9**	**3.8**
5	190	74.7	11.2*	9.2*	4.7*	#
6	298	64.9	9.7	13.4	11.3	#
7	257	51.8	11.1	14.5	20.5	#
8	262	37.6	10.7	16.4	29.6	5.8*
9	279	32.5	7.8*	16.2	34.5	9.0

(a) Never Smoker who has Never Seriously Thought About Smoking

(b) Never Smoker who has Seriously Thought About Smoking

(c) Smoked Beyond Puffing, Not Daily Smoker

* Moderate sampling variability; interpret with caution

# Data suppressed due to high sampling variability

Table 3-10a
Parental Education by Smoking Category, Canada, Youth Smoking Survey 2002

2002	Less Than Secondary	Secondary Graduate and Post	University Degree
Pop. Est. ('000)	186	1,326	496
Never Smoker a) (%)	57.5	68.1	76.9
Never Smoker b) (%)	6.9	8.6	7.4
Puffer (%)	13.2	10.7	8.3
Smoked Beyond Puffing (c) (%)	17.2	10.9	6.8
Daily Smoker (%)	5.2*	1.7	#

(a) Never Smoker who has Never Seriously Thought About Smoking
(b) Never Smoker who has Seriously Thought About Smoking
(c) Smoked Beyond Puffing, Not Daily Smoker
* Moderate sampling variability; interpret with caution
# Data suppressed due to high sampling variability

Table 3-10b
Parental Education by Smoking Category, Canada, Youth Smoking Survey 1994

1994	Less Than Secondary	Secondary Graduate and Post	University Degree
Pop. Est. ('000)	402	1,204	336
Never Smoker (a) (%)	44.0	50.9	56.9
Never Smoker (b) (%)	7.8	9.3	9.5
Puffer (%)	15.8	13.4	13.7
Smoked Beyond Puffing (c) (%)	26.1	22.0	17.6
Daily Smoker (%)	6.2	4.5	2.3*

(a) Never Smoker who has Never Seriously Thought About Smoking
(b) Never Smoker who has Seriously Thought About Smoking
(c) Smoked Beyond Puffing, Not Daily Smoker
* Moderate sampling variability; interpret with caution

Table 3-11
Smoking Category by Aboriginal Status, Canada, Youth Smoking Survey 2002

	Pop. Est. ('000)	Never (a) %	Never (b) %	Puffer %	Smoked Beyond Puffing (c) %	Daily Smoker %
Aboriginal	102	50.9	10.1	15.7	17.6	5.7*
Non-Aboriginal	1,904	70.2	8.0	10.0	10.1	1.6

(a) Never Smoker who has Never Seriously Thought About Smoking
(b) Never Smoker who has Seriously Thought About Smoking
(c) Smoked Beyond Puffing, Not Daily Smoker
* Moderate sampling variability; interpret with caution
Percentages may not add to 100 due to rounding

Table 3-12a
Smoking Category by Aboriginal Status in the Prairie Provinces and British Columbia, Youth Smoking Survey 2002

2002	Pop. Est. ('000)	Never Smoker (a) %	Never Smoker (b) %	Puffer %	Smoked Beyond Puffing (c) %	Daily Smoker %
Aboriginal	55	56.3	7.4*	14.1*	17.3	#
Non-Aboriginal	554	76.2	7.1	9.2	6.7	#

(a) Never Smoker who has Never Seriously Thought About Smoking
(b) Never Smoker who has Seriously Thought About Smoking
(c) Smoked Beyond Puffing, Not Daily Smoker
* Moderate sampling variability; interpret with caution
# Data suppressed due to high sampling variability

Table 3-12b
Smoking Category by Aboriginal Status in the Prairie Provinces and British Columbia, Youth Smoking Survey 1994

1994	Pop. Est. ('000)	Never Smoker (a) %	Never Smoker (b) %	Puffer %	Smoked Beyond Puffing (c) %	Daily Smoker %
Aboriginal	37	34.9*	#	#	32.5*	#
Non-Aboriginal	547	51.4	9.7	14.2	20.7	4.1

(a) Never Smoker who has Never Seriously Thought About Smoking
(b) Never Smoker who has Seriously Thought Smoking
(c) Smoked Beyond Puffing, Not Daily Smoker
* Moderate sampling variability; interpret with caution
# Data suppressed due to high sampling variability

Table 3-13 Full Agreement with Self Esteem Items, by Never/Ever Smoker Category, Canada, Youth Smoking Survey 2002

	Never Smoker %	Ever Smoker %
Pop. Est. ('000)	1,570	457
I Like the Way I Am	43.2	31.1
I Have a Lot to be Proud Of	47.0	32.2
A Lot of Things About Me are Good	43.8	30.2
When I do Something, I do it Well	25.3	17.5

CHAPTER 4 - QUITTING BEHAVIOUR

Jennifer L. O'Loughlin, PhD
Department of Epidemiology, Biostatistics and Occupational Health
McGill University
Institut national de santé publique du Québec

Paul W. McDonald, PhD
Department of Health Studies and Gerontology
Health Behaviour Research Group
University of Waterloo

Murray J. Kaiserman, PhD
Tobacco Control Programme
Health Canada

Sarah Viehbeck, MSc
Department of Health Studies and Gerontology
University of Waterloo

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HIGHLIGHTS

- Of approximately 247,100 students in grades 5-9 across Canada who smoked beyond puffing not daily or daily smokers in 2002, 39% had seriously thought about quitting. One-third of 210,300 students who smoked beyond puffing, not daily smokers had thought about quitting, compared to three-quarters of 36,800 daily smokers.
- Among 92,100 smoked beyond puffing, not daily smokers and daily smokers who had seriously thought about quitting, 68% had made one or more attempts to quit smoking in their lifetime. The average number of lifetime quit attempts was 3.2 in 2002 compared with 3.4 in 1994.
- Among 62,100 smoked beyond puffing, not daily smokers and daily smokers who had ever seriously thought about quitting and who had tried to quit, 72% had made at least one recent quit attempt (in the six months preceding the survey).
- The proportion of smoked beyond puffing, not daily smokers and daily smokers who had ever seriously thought about quitting who had made a recent quit attempt (in the six months preceding the survey) ranged from 65% in Manitoba to 87% in Alberta.
- Smoked beyond puffing, not daily smokers who had tried to quit were able to remain abstinent longer than daily smokers who had tried to quit - 51% had remained abstinent for longer than one month, compared to only 17% of daily smokers.

METHODS

This section covers definitions and sample issues specific to this chapter. For detailed methods on the entire 2002 Youth Smoking Survey refer to Chapter 2.

Definitions

Smoking Behaviour

This chapter includes only those survey respondents who reported smoking and for whom quitting behaviours are relevant. Specifically, this includes Smoked Beyond Puffing, Not Daily Smokers and Daily Smokers. Those who had tried smoking, even a few puffs, but had never smoked a whole cigarette (the Puffer category) were not included in this chapter - because these individuals had smoked so little, quitting behaviours may not yet be relevant. Smoked beyond puffing, not daily smokers includes respondents who had smoked a whole cigarette but had not smoked every day during the week preceding data collection. The Daily Smoker category includes those who reported smoking cigarettes on each of the seven days preceding data collection. Throughout this chapter, the term "novice smokers" refers collectively to smoked beyond puffing, not daily smokers and daily smokers. The word "novice" reflects that, relative to older adolescents and young adults who have smoked over many months or years, these young persons have less experience smoking and less established smoking patterns.

Quitting Behaviour

Questionnaire items relevant to quitting behaviour included whether or not the respondent had ever seriously thought about quitting (Y_Q32), the number of times the individual had tried to quit smoking in his/her lifetime (lifetime quit attempts) (Y_Q33), the age at which the participant had first tried to quit (Y_Q34), whether or not the participant had tried to quit in the six months prior to the survey (Y_Q35) and finally, the longest time during which the participant had remained abstinent (Y_Q36). Data on lifetime quit attempts were coded only for respondents who had ever seriously thought about quitting. Similarly data on quit attempts for the past six months were coded only for respondents who had ever tried to quit. Thus the data do not permit identification of respondents who had made a successful quit attempt and remained non-smokers.

Additional Variables of Interest

To identify factors other than sex, grade, and type of smoker that might be related to quitting behaviours, we examined the association between whether or not the participant had made a quit attempt in the six months prior to the survey and selected (i) socio-demographic factors (GPP_Q14a; GPP_Q17; Y_Q03 and Y_QDVABORIG); (ii) beliefs about smoking (Y_Q46a, Y_Q46e and Y_Q46j); (iii) facilitators and barriers to smoking in the social and physical environments (Y_Q25; Y_Q29; Y_Q37a; Y_Q39a; Y_Q42; Y_Q44; Y_Q53; Y_Q55 and Y_Q58); (iv) other risk behaviour indicators (Y_Q05a; Y_Q05b; Y_Q05g; Y_Q06; Y_Q08; Y_Q66a; Y_Q dvpdg and Y_Qdvnpg); and finally (v) other potential correlates (Y_Q54 and Y_Q62). We studied recent quit attempts as the outcome of interest in these analyses because they may be less subject to recall bias than lifetime quit attempts. This series of analyses is of interest because they might suggest hypotheses for investigation in future analyses of the YSS database, as well as in future youth tobacco research.

Sample and Response

A weighted total of 247,100 Canadian youth had smoked in the 30 days preceding data collection, including 210,300 smoked beyond puffing, not daily smokers and 36,800 daily smokers. Of these, 92,100 had seriously thought about quitting, 62,100 had made one or more quit attempts in their lifetime (lifetime quit attempt), and 38,900 had tried to quit in the last six months. Categorization of survey respondents by sex, grade, or type of smoker resulted in small sample sizes with which the power to detect differences between subgroups was low. For example, because there were so few respondents in grades 5-6 who responded positively to the quitting behaviour items, we were not able to investigate grade-related variability in the outcomes of interest by sex. In order to address this limitation, an expanded data set that included all respondents who had smoked (not just those who had smoked in the last 30 days) was used in this chapter, thus making it unique among chapters that report findings. The expanded data set was intended to better capture quitting behaviors among novice smokers". Only comparisons that were statistically significant at the p= 0.05 level are reported and discussed. To interpret differences between proportions not discussed in this chapter, the reader is referred to Chapter 2, Tables 2-1a, 2-1b and 2-1c, which provide a guide on differences between proportions that attain a statistical significance level at the 0.05 level.

Missing data on each of the main variables investigated in this chapter accounted for less than 10% of total responses. The data presented are therefore based on respondents for whom complete data were available for the variables under consideration.

FINDINGS

Prevalence of Quitting Behaviours

Quitting Cognitions

Of all respondents in grades 5-9 smoked beyond puffing, not daily smokers, or daily smokers, 39% had seriously thought about quitting (Table 4-A). This proportion did not differ by sex or by grade. How,ever approximately one-third (33%) of smoked beyond puffing, not daily smokers had seriously thought about quitting, compared to about three-quarters (76%) of daily smokers.

Ever Tried to Quit

Among respondents who had seriously thought about quitting, 68% had made one or more attempts to quit smoking in their lifetime (Table 4-B). There were no statistically significant differences in this proportion by sex, grade, or type of smoker. Among respondents who had made at least one quit attempt, the average number of lifetime quit attempts was 3.2 and 3.4 in 2002 and 1994, respectively (Table 4-1, presented at the end of the chapter). The data for both 2002 and 1994 corroborate the findings reported above, that daily smokers had made more quit attempts than smoked beyond puffing, not daily smokers (3.7 compared to 3.0 attempts on average in 2002; and 3.9 compared to 3.1 attempts on average in 1994).

Table 4-2 shows that there was little difference by sex in the longest duration that respondents had successfully stopped smoking. However 51% of smoked beyond puffing, not daily smokers had remained abstinent for longer than one month, compared to only 17% of daily smokers, a difference that was statistically significant.

Table 4-A
Ever Seriously Thought About Quitting by Category of Smoker, Grade, and Sex, Canada, Youth Smoking Survey 2002

	Pop. Est. ('000)	Ever Seriously Thought About Quitting (%)
Total	**247.1**	**39.3**
Category of Smoker		
Smoked Beyond Puffing (c)	210.3	32.9
Daily Smoker	36.8	75.9
Grade		
5-6	25.8	38.1
7	44.5	42.0
8	74.1	37.8
9	102.8	39.4
Sex		
Males	120.3	37.2
Females	126.9	41.2

(c) Smoked Beyond Puffing, Not Daily Smoker

Table 4-B
Ever Tried To Quit by Category of Smoker, Grade, and Sex, Canada, Youth Smoking Survey 2002

	Pop. Est. ('000)	Ever Tried to Quit (%)
Total	**92.1**	**68.2**
Category of Smoker		
Smoked Beyond Puffing (c)	64.2	64.6
Daily Smoker	27.9	76.6
Grade		
5-6	8.9	76.2
7	17.2	68.8
8	26.4	64.2
9	39.6	68.9
Sex		
Males	42.4	68.6
Females	49.7	67.9

(c) Smoked Beyond Puffing, Not Daily Smoker

Recent Quit Attempts

Among respondents who had ever tried to quit, 72% had made at least one recent quit attempt in the six months preceding the survey (Table 4-C). This proportion did not differ according to sex or category of smoker, but the proportion of students who had made a recent quit attempt increased significantly from grades 5-6 (48%) to grade 7 (80%).

The proportions of respondents who made a recent quit attempt in both 2002 and 1994 did not differ by number of cigarettes smoked daily (Table 4-D).

Table 4-C
Tried to Quit in the Last Six Months by Category of Smoker, Grade, and Sex (Among Students Who Had Ever Seriously Thought About Quitting and Who Had Made at Least One Quit Attempt), Canada, Youth Smoking Survey 2002

	Pop. Est. ('000)	Tried to Quit in Last 6 Months (%)
Total	**62.1**	**72.1**
Category of Smoker		
Smoked Beyond Puffing (c)	40.9	71.2
Daily Smoker	21.2	73.7
Grade		
5-6	6.6	48.1*
7	11.8	79.5
8	16.5	69.0
9	27.1	76.5
Sex		
Males	28.4	70.4
Females	33.7	73.5

(c) Smoked Beyond Puffing, Not Daily Smoker

* Moderate sampling variability, interpret with caution

Table 4-D
Tried to Quit in the Last Six Months by the Number of Cigarettes Smoked per Day and Sex (Among Students Who Had Ever Seriously Thought About Quitting and Who Had Made at Least One Quit Attempt), Canada, Youth Smoking Survey 2002 and Youth Smoking Survey 1994

	2002		1994	
Number of cigarettes per day	**Pop. Est. ('000)**	**Tried to Quit in Last 6 months (%)**	**Pop. Est. ('000)**	**Tried to Quit in Last 6 Months (%)**
Total	**38.9**	**75.6**	**142.4**	**79.1**
0-5	26.0	77.2	74.1	83.4
6-10	6.1	69.9	28.6	73.1
>10	6.7	75.0	39.7	75.4

Recent Quit Attempts by Province

The distributions by province of the proportion of individuals in grades 5-9 who had made at least one quit attempt in the past six months were not statistically significantly different (Table 4-E).

Table 4-E
Tried to Quit in the Last Six Months by Province (Among Students Who Had Ever Seriously Thought About Quitting and Who Had Made at Least One Quit Attempt), Canada, Youth Smoking Survey 2002

Province	Pop. Est. ('000)	Tried to Quit in Last 6 Months (%)
Total, Canada	**62.1**	**72.1**
NL	1.7	75.3
PE	0.2	65.3*
NS	2.1	72.3
NB	1.8	79.6
QC	33.1	70.2
ON	9.9	71.1
MB	2.3	65.1
SK	1.1	67.3*
AB	5.6	86.7
BC	4.5	70.2

* Moderate sampling variability, interpret with caution

Relation of Recent Quit Attempts to Other Variables

The data presented in Tables 4-3 to 4-7 (presented at the end of the chapter) explore the associations between recent quit attempts in the last six months and a variety of socio-demographic variables, beliefs about smoking, indicators of the social and physical environment, risk behaviours other than smoking, and other miscellaneous variables. There were no statistically significant differences in the proportion of respondents who reported recent quit attempts across categories for any of the variables investigated. However, recent quit attempts did show at least a 10% difference between two or more categories of the following variables: household income, how youth obtain cigarettes, father smokes, friends smoke, played sports with a coach in the last 12 months, desired weight, use of non-prescription drugs to get high and not for medical purposes, and perceived academic standing. These associations warrant further investigation.

DISCUSSION

The objectives of this chapter are twofold – to describe the prevalence of quitting behaviours among novice smokers and to identify possible correlates of quitting behaviours that will increase our understanding of successful quitting in youth and guide the development of evidence-based interventions.

Thinking about quitting might represent an important first step in the quitting process. Approximately 40% of the novice smokers in the 2002 YSS had seriously thought about quitting, indicating moderate interest in quitting in the early stages of smoking onset. However this proportion was strongly associated with smoking status - only one-third of smoked beyond puffing, not daily smokers had seriously thought about quitting, compared to three-quarters of daily smokers. Possible explanations for this difference are threefold. First, the difference might reflect self-awareness or self-identification as a smoker. Smoked beyond puffing, not daily smokers, especially younger smoked beyond puffing, not daily smokers, might not begin to think about quitting until they have accumulated a certain amount of experience with smoking and actually view themselves as being smokers. Second, the observed difference could reflect a belief among smoked beyond puffing, not daily smokers that they are adequately managing the risks associated with smoking without having to quit. Smoked beyond puffing, not daily smokers may (mistakenly) believe that their smoking pattern allows them to balance the perceived risks and benefits of smoking, while daily smokers may feel more vulnerable to the negative aspects of smoking. Third, the difference could reflect increased exposure over time to anti-smoking education that encourages quitting. One could speculate that youth have been so well educated about the negative aspects of smoking that initiation and experimentation may create cognitive dissonance or negative feelings leading to a desire to quit. Although this explanation is speculative, it will be important to determine if novice smokers who have seriously thought about quitting might benefit from interventions to boost their commitment and self-confidence for quitting.

Approximately 60% of "novice smokers" had never thought about quitting. These individuals may need interventions to increase self-awareness that they are indeed smokers despite low levels of cigarette use, and to increase knowledge about the dangers of even low exposure to cigarettes and the increased difficulty in quitting as smoking becomes established.

The data support the notion that seriously thinking about quitting leads to quit attempts - two-thirds (68%) of "novice smokers" who had seriously thought about quitting, had made at least one attempt to quit smoking, and the majority (72%) had tried recently (i.e., in the six-month period preceding the survey). However, the cross-sectional design used to collect these data renders it difficult to determine the direction of the association. Therefore, it is at least theoretically possible that a recent spontaneous quit attempt may also cause youth to think more seriously about quitting in the future. Recent quit attempts did not differ according to age, sex, or number of cigarettes smoked per day. However the proportion of "novice smokers" who had made a recent quit attempt increased from 48% among "novice smokers" in grades 5-6 to 80% in grade 7. Differences by grade may simply be a function of time since tobacco use initiation whereby those who have smoked for longer periods of time are more likely to try quitting. Controlling for time since tobacco use initiation would help resolve this issue.

Alternatively this could reflect increased exposure to tobacco control programming among students in secondary school.

There were marked differences between daily smokers and smoked beyond puffing, not daily smokers in longest time quit; smoked beyond puffing, not daily smokers were able to remain abstinent for longer time periods than daily smokers. This might reflect an increasing need for regular exposure to cigarettes as symptoms of nicotine dependence begin to emerge in daily smokers, with a concomitant desire to avoid the unpleasant symptoms of withdrawal. This difference could also reflect differences in the strength of cues and stimuli to smoke (i.e., daily smokers may receive more frequent positive and negative environmental reinforcement to smoke).

Although the provincial differences were not statistically significant, they are of considerable interest because they could reflect differences among provinces in tobacco control programs and policies that affect quitting behaviours. For example, provinces differ in their levels of tobacco taxation and in the percentage of the population that is covered by comprehensive no smoking legislation. Moreover, tobacco control initiatives in several provinces such as Ontario and Quebec were introduced several years ago and may be subject to "wear out" or habituation, especially if they were introduced before the young smokers studied in this database initiated tobacco use. Whatever the reasons, these "natural experiments", which are initiated when new policies and programs are introduced in some provinces and not in others, warrant investigation to assess their impact on quitting behaviours in youth.

Both cross-sectional and longitudinal studies have identified a variety of determinants of successful cessation in youth. The likelihood of quitting successfully appears to be related to several psychosocial characteristics including anti-tobacco beliefs[1] and attitudes[2], intentions not to smoke in the future[3,4], self-efficacy[2], school performance[5], feeling hopeful about life[1], having an intact nuclear family[3], and not having symptoms of depression[6]. The evidence is strong that heavy smoking is related to lower success in quitting. Occasional smokers are more likely to quit than regular smokers[4, 6]. In a 4-year longitudinal study[6], past quit attempts that lasted longer than two weeks predicted cessation, as did having no past quit attempts. The smoking-related environment also seems to play a role in the cessation process: adolescents are more likely to succeed in quitting if they have fewer friends or family members who smoke[1, 3, 7]. The perception of less parental approval of smoking has also been found to be a predictor in some studies[1]. Finally, policy interventions such as price increases and workplace smoking restrictions have also been found to be an effective means of reducing the likelihood of smoking among youth[8]. However, whether reductions in youth smoking prevalence are a result of reduced smoking initiation or increased smoking cessation remains unclear[9]. Regardless, a comprehensive tobacco control program should include attention to the broader context in which youth live through policy initiatives.

Beyond analyses of quit behaviours according to grade, sex, smoking status, and province, an attempt was made to delineate hypotheses regarding potential determinants of quitting behaviours in youth. Likely related to small sample sizes, none of these other associations were statistically significant, although several variables (household income, how youth obtain cigarettes; father smokes, friends smoke, played sports with a coach in the last 12 months, desired weight, use of non-prescription drugs to get high and not for medical purposes, and perceived academic standing) warrant further investigation.

Limitations

A major difficulty in this database is that, because the quit-related questions were asked only of respondents who had smoked in the past 30 days, respondents who had made a successful quit attempt, and had since remained non-smokers could not be identified. Therefore the frequency and determinants of "true" quitting in youth could not be investigated. While we were able to study quit attempts, attempting to quit and successfully quitting may represent very different phenomena with very different frequencies and very different profiles of determinants.

A second limitation relates to the measurement of quit behaviours. Differences in quit behaviours observed in this chapter between smoked beyond puffing, not daily smokers and daily smokers may relate more to differences in the conceptualization of quitting behaviour in these two groups, than to actual differences; smoked beyond puffing, not daily smokers and daily smokers may attribute different meanings to the notion of quit attempts and actual quitting. For example daily smokers may have a different (more developed) conceptualization of what a quit attempt actually is because of more experience with smoking. They may also have been more likely than smoked beyond puffing, not daily smokers to confuse quitting (which infers lifetime abstinence) with stopping smoking (i.e., indefinite abstinence).

A third limitation relates to the relatively small sample size of young smokers, which precluded sub-group analysis and detection of variables possibly associated with quit behaviours in youth.

Implications for Future Monitoring and Further Research

In general, the literature on the quit attempts, successful quitting, and the determinants of youth cessation is impeded by the lack of standardized measures of successful quitting. Therefore an important need exists for the development of valid and reliable questions that enable identification of young smokers who are able to quit successfully. Qualitative research to explore the interpretation and meanings of possible quit-related items in youth will help address this issue, and the development of a standardized set of quit-related items for youth will facilitate surveillance and monitoring efforts, as well as enable relevant comparisons across observational studies in different populations.

There are few reports that document the natural history of tobacco use onset in youth, including attempts to quit and successful quitting. In particular, it will be important to differentiate between periods during which novice smokers stop smoking temporarily as part of the onset trajectory, true quit attempts which reflect a deliberate planned intention to stop smoking completely and forever, and successful quit attempts after which the individual maintains a nonsmoking status on a long term basis. Increased understanding of the natural history of onset and quitting in novice smokers will facilitate the development of survey items on quitting relevant to youth at the various stages of smoking onset process.

Until such time as we better understand the quitting process, future surveys could investigate a wider range of potential determinants of quitting behaviour. These could include variables such as withdrawal symptoms, nicotine dependence symptoms, stress, depression, novelty-seeking, rebelliousness, difficulty with cessation, knowledge of nicotine replacement therapy, knowledge of other resources to help youth quit, and attempts to seek help with cessation. In particular, the role of nicotine dependence in self-initiated cessation, relative to other known predictors of cessation in youth, should be investigated. Dependence likely explains why daily smokers are less likely to maintain a quit status than smoked beyond puffing, not daily smokers. Testing these hypotheses in well-powered longitudinal studies designed specifically to identify determinants, along with improved understanding of the natural history of smoking onset and quitting in youth, will increase our understanding of quit behaviours in youth. It will help identify sub-populations in need of intervention; and it will help direct efforts to develop effective and relevant interventions.

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Table 4-1
Mean, Median And Range Of Number Of Lifetime Quit Attempts by Type Of Smoker and Sex (Among Students Who Had Ever Seriously Thought About Quitting and Who Had Made at Least One Quit Attempt), Canada, Youth Smoking Survey 2002 and Youth Smoking Survey 1994

	2002				1994			
	Pop. Est. ('000)	**Mean**	**Median**	**Range**	**Pop. Est. ('000)**	**Mean**	**Median**	**Range**
Total,	**62.5**	**3.2**	**2**	**1-21**	**141.8**	**3.4**	**2**	**1-24**
Smoked Beyond Puffing (c)	41.2	3.0	2	1-21	94.2	3.1	2	1-24
Daily Smoker	21.3	3.7	3	1-20	47.6	3.9	3	1-21
Sex								
Males	28.8	3.5	2	1-21	63.9	3.6	2	1-24
Females	33.7	3.1	2	1-20	77.9	3.2	2	1-22

(c) Smoked Beyond Puffing, Not Daily Smoker

Note: Respondents who responded "I Don't Know" were excluded

Table 4-2
Longest Length of Time (Days) Successfully Stopped Smoking by Category of Smoker and Sex (Among Students Who Had Ever Seriously Thought About Quitting and Who Had Made at Least One Quit Attempt), Canada, Youth Smoking Survey 2002

	Pop. Est. ('000)	**=1 Day %**	**2-7 Days %**	**8-31 Days %**	**>1 Month %**
Total	**79.1**	**13.3**	**27.7**	**18.4**	**40.5**
Sex					
Males	35.6	12.5	29.4	19.2	38.8
Females	43.4	14.0	26.4	17.7	41.9
Category of Smoker					
Smoked Beyond Puffing (c)	54.7	9.0	20.1	19.9	51.1
Daily Smoker	24.4	23.0	44.8	15.2	17.0

(c) Smoked Beyond Puffing, Not Daily

Table 4-3
Tried to Quit in the Last Six Months by Socio-Demographic Factors (Among Students Who Had Ever Seriously Thought About Quitting and Who Had Made at Least One Quit Attempt), Canada, Youth Smoking Survey 2002

Socio-Demographic Factors	Pop. Est. ('000)	Tried to Quit in Last Six Months (%)
Parental Education+	**61.6**	**71.8**
Completed Less Than High School	14.2	71.0
Completed High School	24.3	72.6
Post-Secondary/University Degree	23.2	71.6
Household Income	**56.4**	**71.1**
Less than $30,000	19.0	79.8
$30,000 to Under $45,000	11.9	68.6
$45,000 or More	25.4	65.8
Language++	**59.0**	**71.6**
English	28.4	74.6
French	30.6	68.7
Aboriginal	**61.8**	**72.2**
Yes	8.1	70.4
No	53.7	72.4

+Based on responding parents (grade 8 or lower and some secondary=Completed less than high school; grade 11-13 graduated and some post secondary=Completed high school; Post secondary certificate or diploma=Post secondary; and University degree=University degree)
++Excludes respondents who reported "French and English" or "Other"

Table 4-4
Tried to Quit in the Last Six Months According to Selected Beliefs About Smoking and Sex (Among Students Who Had Ever Seriously Thought About Quitting and Who Had Made at Least One Quit Attempt), Canada, Youth Smoking Survey 2002

Believe...	One Would Have to Smoke Many Years to Affect Health		Quitting Can Reduce Health Damage		Smokers Can Quit Anytime They Want	
	Pop. Est. ('000)	Tried to Quit In Last 6 Months (%)	Pop. Est. ('000)	Tried to Quit In Last 6 Months (%)	Pop. Est. ('000)	Tried to Quit In Last 6 Months (%)
Total	**62.1**	**72.1**	**62.1**	**72.1**	**62.1**	**72.0**
Yes	17.9	70.7	30.1	69.9	17.4	74.9
No	36.2	75.2	21.4	73.6	40.7	70.6
Don't Know	7.9	61.0	10.6	75.3	3.9	74.1

Table 4-5
Tried to Quit in the Last Six Months by Selected Indicators of the Social And Physical Environment (Among Students Who Had Ever Seriously Thought About Quitting and Who Had Made at Least One Quit Attempt), Canada, Youth Smoking Survey 2002

Indicators of Social and Physical Environment	Pop. Est. ('000)	Tried to Quit in Last Six Months (%)
Rules About Smoking at School+	**57.6**	**72.2**
No Rules/Allowed in Some Areas	34.7	71.1
Not Allowed	22.9	73.9
Ever Taught About Health Problems Related to Smoking at School*	**57.8**	**73.5**
Yes	49.5	74.6
No	8.4	66.8
Usually Obtain Cigarettes by:	**50.8**	**77.3**
Buying Them	28.6	78.8
Someone Gives Them to Me	19.3	73.6
Take Them	3.0	86.5
Store Has Refused to Sell You Cigarettes	**28.3**	**72.9**
Yes	17.9	74.4
No	10.4	70.3
Mother Smokes++	59.9	72.4
Yes	30.1	74.4
No	29.9	70.3
Father Smokes**	56.2	72.1
Yes	29.1	79.0
No	27.0	65.7
Friends' Smoke	**56.8**	**71.8**
None/Less Than Half	21.6	68.4
More Than Half	23.2	71.5
All	11.9	78.4
Ever Smoke Inside Your Home	**57.4**	**74.6**
Yes	28.3	77.4
No	29.2	71.9
Believe Health Warning Messages on Cigarette Packages	**54.4**	**71.2**
Yes	43.0	71.3
No	5.4	72.2
Don't know	6.0	69.2

+ Excludes respondents who responded "Don't know"

++ Excludes respondents who responded "Don't know" or "Do not live with mother/father"

Table 4-6
Tried to Quit in the Last Six Months by Other Selected Indicators of Behaviour (Among Students, Who Had Ever Seriously Thought About Quitting and Who Had Made at Least One Quit Attempt), Canada, Youth Smoking Survey 2002

Selected Behavioural Indicators	**Pop. Est. ('000)**	**Tried to Quit in Last Six Months (%)**
Played Sports Without a Coach in the Last 12 Months	**61.9**	**72.0**
<= 3 Times/Week	37.5	75.3
>= 4 Times/Week	24.5	67.1
Played Sports With a Coach in the Last 12 Months	**61.9**	**72.1**
No (Never)	22.9	79.0
Yes (All Other Categories)	39.0	68.0
Played Computer/Video Games In the Last 12 Months	**61.9**	**72.0**
<= 3 Times/Week	31.0	73.5
>= 4 Times/Week	30.9	70.5
Hours Per Day Spent Watching TV/Videos	**61.6**	**71.9**
0-<1	5.5	69.8
1-2	21.0	70.0
3-4	23.9	73.1
>=5	11.3	73.7
Desired Weight	61.5	71.8
Less	30.6	72.5
Same	18.9	67.9
More	7.0	78.0
Don't Know	5.0	73.7
Ever Had 5 Drinks or More on One Occasion	52.7	75.8
Yes	41.6	73.9
No	11.1	82.7
Use of Prescription Drugs to Get High and Not for Medical Purposes	**54.4**	**75.3**
Yes	8.5	72.0
No	45.9	75.9
Use of Non-Prescription Drugs to Get High and Not for Medical Purposes	**54.3**	**75.3**
Yes	4.4	66.6*
No	49.9	76.0

*Moderate sampling variability; interpret with caution

Table 4-7
Tried to Quit in the Last Six Months by Other Potential Correlates (Among Students Who Had Ever Seriously Thought About Quitting and Who Had Made at Least One Quit Attempt), Canada, Youth Smoking Survey 2002

Other Potential Correlates	Pop. Est. ('000)	Tried to Quit in Last Six Months (%)
Perceived Academic Standing	61.3	72.1
Better Than Average	9.7	63.1
Average	38.0	75.1
Below Average	13.6	70.1
Ever Asked A Doctor For Help Quitting	58.9	74.0
Yes	3.0	69.1*
No	55.9	74.3

*Moderate sampling variability; interpret with caution

CHAPTER 5 - SOCIAL INFLUENCES

Scott T. Leatherdale, PhD
Division of Preventive Oncology
Cancer Care Ontario,
Department of Health Studies and Gerontology
University of Waterloo, &
Department of Public Health Sciences
University of Toronto

Steve R. Manske, EdD
Centre for Behavioural Research and Program Evaluation
University of Waterloo

Alan Diener, PhD
Tobacco Control Programme
Health Canada

Sarah J. Robinson, BKin(Hons)
Department of Health Studies and Gerontology
University of Waterloo

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HIGHLIGHTS

- Youth smoking behaviour is strongly influenced by people in the social environment. Important people in the social environment include friends, parents, and other people who might live in the youth's home (e.g., siblings).
- The smoking behaviour of close friends is important. Overall, 28% of youth in grades 5-9 have one or more close friends who smoke. The greater the number of close friends who smoke, the more likely a youth is to smoke. The same relationship exists for males and females. The number of youth with close friends who smoke has declined since 1994.
- The smoking behaviour of parents is also important. A youth with a father or mother who smokes is more likely to smoke. A female youth is more likely than a male youth to smoke if she has a smoking parent. When both parents smoke, a youth is more likely to smoke than when only one parent smokes. The number of youth who have a father and/or mother who smokes has declined since 1994.
- Parental attitudes about youth smoking are related to youth smoking behaviour. Permissive attitudes tend to promote smoking. However, the majority of youth smokers reported their parents are not aware of their smoking.
- Smoking within the home is also related to youth smoking behaviour. Overall, 30% of youth live in a home with one or more people who smoke. The greater the number of smokers inside the home the more likely a youth is to smoke. Youth who have ever smoked inside their home are also more likely to be daily smokers. The number of youth living in a home where no one smokes inside has increased since 1994.
- Parents' educational attainment continues to be strongly related to smoking among their children.
- These findings indicate that there is a continuing need for comprehensive tobacco control programming aimed at reducing youth exposure to smoking social models. Although youth reported being exposed to fewer friends and family members who smoke in 2002 compared to 1994, smoking social models continue to have a strong influence on youth smoking behaviour. Additional regulations and education campaigns designed to reduce the prevalence of smoking should target both youth and the important people surrounding youth.

METHODS

This section covers definitions and sample issues specific to this chapter. For detailed methods on the entire 2002 Youth Smoking Survey refer to Chapter 2. In this chapter, data from the 2002 Youth Smoking Survey (YSS) are examined to determine the relationship between cigarette smoking behaviour in youth and the smoking behaviour of friends, parents, and other potentially important people in the social environment surrounding youth (e.g., siblings). These 2002 YSS data are also compared to the 1994 YSS data to determine if the relationships between youth smoking behaviour and friends, parents, and important others has changed over time.

Definitions

The effects of social influences are examined for: Daily Smokers; Smoked Beyond Puffing, Not Daily Smokers; Puffers; Never Smokers who have Seriously Thought about Smoking; and Never Smokers who have Never Seriously Thought about Smoking. The definitions used to categorize these five different types of smokers have been described earlier (see Chapters 2 and 3, especially Table 2-C).

Close friends of youth can exert implicit and explicit social pressure to smoke.[1-3] Youths' reports of the number of close friends who smoke (Y_Q44) was examined for an association with the smoking habits of youth.

Parents who smoke can make smoking appear socially acceptable and normative.[2,3] Youths' reports of the smoking habits of their father (Y_Q37A) and of their mother (Y_Q39A) was examined for an association with the smoking habits of youth. A variable that combines the smoking habits of the father and the mother was also created to examine the influence of situations in which both parents smoke, the father smokes but the mother does not, the mother smokes but the father does not, and neither parent smokes. Parental attitudes about youth smoking may also be important.[3] Youths' reports of their father's attitude about their smoking (Y_Q38) and their mother's attitude about their smoking (Y_Q40) were examined for an association with the smoking habits of the youth.

A variable for parent education was also created to examine the influence of parental education on the smoking behaviour of their child. The parent/guardian who completed the parent survey reported his/her highest grade or level of education (P_Q14A) and the highest grade or level of education for the other parent/guardian in the household (P_Q14B).

The smoking behaviour of people inside the youth's home may make a youth more apt to smoke.[2,4] Youths' reports of the number of people (other than the respondents) who smoke inside their home (Y_Q41) was examined for an association with the smoking habits of the youth. Youths' report as to whether they have ever smoked inside their home (Y_Q42) was also examined.

Sample and Response

Missing data for items discussed in this chapter accounted for less than 10% of the total responses. As such, the data presented are based on those for whom complete data were available. According to Statistics Canada guidelines, data are not reportable if the sample size was too small or if there was high sampling variability. Statistically significant group differences were determined using procedures described in Chapter 2.

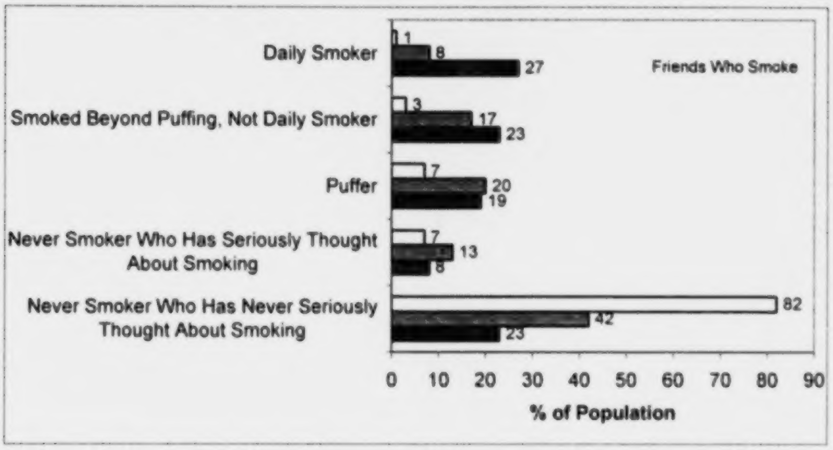
FINDINGS

Close Friends' Smoking Behaviour

Table 5-1a provides details of the relationship between the smoking behaviour of youth and their close friends, as reported in the 2002 YSS. Among all youth in grades 5-9, 72% reported that none of their close friends smoke, while only 8% reported they have five or more close friends who smoke. There appears to be a strong relationship between the smoking behaviour of close friends and the smoking behaviour of youth. For daily smokers, only 10% reported they have no close friends who smoke, whereas 43% reported they have five or more close friends who smoke. For smoked beyond puffing, not daily smokers, 30% reported they have no close friends who smoke and 23% reported they have five or more close friends who smoke. For puffers, 49% reported they have no friends who smoke and 13% reported they have five or more close friends who smoke. Never smokers have substantially fewer close friends who smoke. For never smokers who have seriously thought about smoking, 63% reported they have no close friends who smoke and 7% reported they have five or more close friends who smoke. For never smokers who have never seriously thought about smoking, 86% reported they have no close friends who smoke and only 3% reported they have five or more close friends who smoke. Very few youth in grades 5-9 (5%) who are never smokers who have not seriously thought about smoking have three or more close friends who smoke.

When considered from a different perspective (Figure 5-A), of all youth in grades 5-9 who reported they have no close friends who smoke, 1% were daily smokers, 3% were smoked beyond puffing, not daily smokers, 7% were puffers, 7% were never smokers who have seriously thought about smoking, and 82% were never smokers who have never seriously thought about smoking. Conversely, of all youth in grades 5-9 who reported they have five or more close friends who smoke, 27% were daily smokers, 23% were smoked beyond puffing, not daily smokers, 19% were puffers, 8% were never smokers who have seriously thought about smoking, and 23% were never smokers who have never seriously thought about smoking.

Figure 5-A
Category of Smoker, by Number of Close Friends Who Smoke, Grades 5-9, Canada, Youth Smoking Survey 2002



Differences are apparent between grades (Table 5-1a). Never smokers who have never seriously thought about smoking in grades 7-9 were more likely to report having one or more friends who smoke (19%) than never smokers who have never seriously thought about smoking in grades 5-6 (7%). Never smokers who have seriously thought about smoking in grades 7-9 were more likely to report having one or more friends who smoke (43%) than never smokers who have seriously thought about smoking in grades 5-6 (25%). Puffers in grades 7-9 were more likely to report having one or more friends who smoke (55%) than puffers in grades 5-6 (36%). The numbers are too small to reliably report the grade differences for smoked beyond puffing, not daily smokers and daily smokers.

Even though there are differences between grades, the relationship between youth smoking and friends' smoking is also evident within grades (Table 5-A). For example (using population estimates), of the 598,000 youth in grades 5-6 who indicated that they have no close friends who smoke, 88% were never smokers who have never seriously thought about smoking. Conversely, of the 19,000 youth in grades 5-6 who indicated that they have five or more close friends who smoke, only 42% were never smokers who have never seriously thought about smoking. The influence of friends' smoking is also evident for youth in grades 7-9. Of the 689,000 youth in grades 7-9 who indicated they have no close friends who smoke, 76% were never smokers who have never seriously thought about smoking, whereas of the 119,000 youth in grades 7-9 who indicated that they have five or more close friends who smoke, 20% were never smokers who have never seriously thought about smoking.

Table 5-A
Number of Close Friends Who Smoke, by Type Category of Smoker, and Grade, Canada, Youth Smoking Survey 2002

	Category of Smoker (%)				
Number of Close Friends who Smoke	Daily Smoker	Smoked Beyond Puffing, Not Daily Smoker	Puffer	Never Smoker (a)	Never Smoker (b)
Grades 5-6	**#**	**2.6**	**6.0**	**7.1**	**83.5**
0 Friends	#	#	4.4	6.1	88.3
1-2 Friends	#	10.1	17.7	15.0	54.5
3-4 Friends	#	#	#	#	38.9
5 or More Friends	#	#	#	#	41.6
Grades 7-9	**7.5**	**11.2**	**13.7**	**9.0**	**58.6**
0 Friends	#	5.1	9.9	8.2	75.6
1-2 Friends	9.3	19.1	20.4	12.9	38.3
3-4 Friends	23.8	24.1	20.2	7.9	24.0
5 or More Friends	29.6	23.8	19.2	7.4	20.0

# Data suppressed due to high sampling variability
(a) Never Smoker who has Seriously Thought About Smoking
(b) Never Smoker who has Never Seriously Thought About Smoking

Table 5-1b provides details of the relationship between the smoking behaviour of youth and their close friends using the 1994 YSS data. Between 1994 and 2002, there was a substantial decrease in the number of youth who have close friends who smoke. When examining the change among all youth in grades 5-9, the percentage of youth with five or more close friends who smoke decreased by 6%, the percentage of youth with three or four close fiends who smoke decreased by 5%, and the percentage of youth with one or two close friends who smoke decreased by 7%. However, the largest change was in the percentage of youth with no close friends who smoke, which increased by 18%. From 1994 to 2002, similar declines in close friend smoking occurred among youth in different grades, and among both males and females.

Father's Smoking Behaviour

In the 2002 YSS there is a strong relationship between the smoking behaviour of youth and their father's smoking behaviour (Table 5-2a). Among all youth in grades 5-9 with a father who smokes, 8% were daily smokers and 11% were smoked beyond puffing, not daily smokers, whereas among youth with a father who does not smoke, only 3% were daily smokers and 6% were smoked beyond puffing, not daily smokers. A significant gender difference was also found, in that 6% of males with a father who smokes were daily smokers and 9% of females with a father who smokes were daily smokers.

Table 5-2b provides details of the relationship between father's smoking and the smoking behaviour of youth, controlling for the father's education level. More youth with a father who smokes reported being a daily smoker, a smoked beyond puffing, not daily smoker, or a puffer if their father has grade 1-10 education than if the father has more than tenth grade education.

Table 5-2c provides details of the relationship found in the 1994 YSS between the smoking behaviour of youth and their father's smoking behaviour. From 1994 to 2002, the overall percentage of youth with a father who smoked decreased by 6%. Among youth with a father who smoked, the percentage of never smokers who have never seriously thought about smoking increased by 17%, and the percentage of smoked beyond puffing, not daily smokers decreased by 16%.

Father's Opinion of Youth Smoking

Table 5-3 provides details of the relationship between the smoking behaviour of youth and their father's opinion of youth smoking that was explored in the 2002 YSS. Among all smoking youth in grades 5-9 who have a father, 43% of daily smokers and 77% of smoked beyond puffing, not daily smokers reported their father doesn't know that they smoke. When fathers are aware that their child smokes, more daily smokers (23%) than smoked beyond puffing, not daily smokers (8%) reported that their father approves or does not care about their smoking. There were no major differences between grades or between males and females in this relationship.

Mother's Smoking Behaviour

There is a strong relationship between the smoking behaviour of youth and their mother's smoking behaviour in the 2002 YSS (Table 5-4a). Among youth with a mother who smokes, 10% were daily smokers and 12% were smoked beyond puffing, not daily smokers, whereas among youth with a mother who does not smoke, only 3% were daily smokers and 6% were smoked beyond puffing, not daily smokers. A significant gender difference was also found, where 8% of males with a mother who smokes were daily smokers and 12% of females with a mother who smokers were daily smokers.

Table 5-4b provides details of the relationship between mother's smoking and the smoking behaviour of youth, controlling for the mother's education level. Similar to the relationship with paternal smoking, more youth with a mother who smokes reported being a daily smoker, a smoked beyond puffing, not daily smoker, or a puffer if their mother has grade 1-10 education than if the mother has more than grade 10 education.

Table 5-4c provides details of the relationship found in the 1994 YSS between the smoking behaviour of youth and their mother's smoking behaviour. From 1994 to 2002, the overall percentage of youth with a mother who smoked decreased by 6%. Similar to the findings with regard to father's smoking, among youth with a mother who smoked, the percentage of never smokers who have never seriously thought about smoking increased by 16%, and the percentage of smoked beyond puffing, not daily smokers decreased by 17%.

Mother's Opinion of Youth Smoking

Table 5-5 provides details of the relationship between the smoking behaviour of youth and their mother's opinion of youth smoking that was explored in the 2002 YSS. (See earlier note about 1994 YSS under father's opinion paragraph.) Among all youth smokers in grades 5-9 who have a mother, over half (51%) reported that their mother doesn't know that they smoke. For youth daily smokers who have a mother, 40% reported their mother does not approve of their smoking and 36% reported their mother does not know they smoke. For smoked beyond puffing, not daily smokers who have a mother, 23% reported their mother does not approve of their smoking and 72% reported their mother does not know they smoke. These results are consistent with the data on father's opinions. (Table 5-3). There were no significant differences between grades or between males and females in this relationship.

Combined Influence of Both Parents Smoking

Table 5-6a provides details of the relationship found in the 2002 YSS between the smoking behaviour of youth and the combined influence of both parents smoking. Among all youth between grades 5-9, 14% reported that both of their parents smoke, 16% reported that only their father smokes, 9% reported that only their mother smokes, and 61% reported that neither parent smokes. There appears to be a strong relationship between the smoking behaviour of youth and the combined influence of both parents smoking. Daily smokers were almost three times more likely than never smokers who have never seriously thought about smoking to have reported that both parents smoke. On the other hand, never smokers who have never seriously thought about smoking were twice as likely as daily smokers to have reported that neither parent smokes. There were no major differences between grades or between males and females in this relationship.

Table 5-6b provides details of the relationship found in the 1994 YSS between the smoking behaviour of youth and the combined influence of both parents smoking. Although the overall percentage of youth with both parents smoking decreased by only 3% from 1994 to 2002, the percentage of youth with neither parent smoking increased by 8% over that same time period. This increase was found among both males and females, and across all grades.

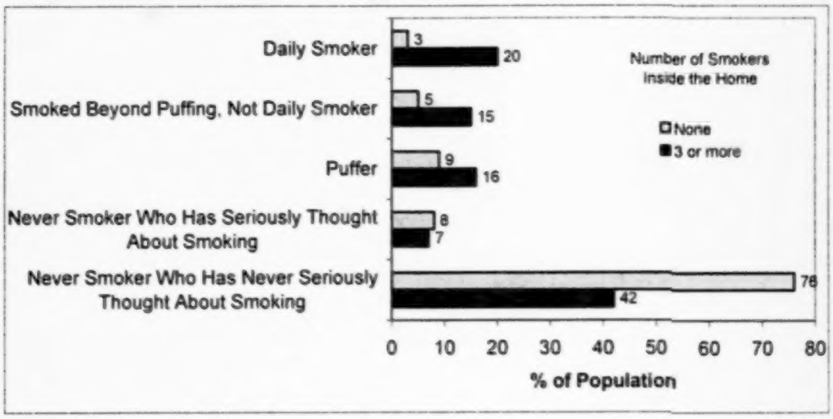
Smoking Inside the Home

There appears to be a strong relationship between the number of smokers inside the home (other than the respondent) and the smoking behaviour of youth in the 2002 YSS (Table 5-7a). Among all youth in grades 5-9, 70% reported that there are no smokers inside their home, 25% reported that there are one or two smokers inside their home, and only 5% reported that there are three or more smokers inside their home. Daily smokers were over six times more likely than never smokers who have never seriously thought about smoking to live in a home where three or more people smoke inside. Not surprisingly, never smokers who have never seriously thought about smoking were more than twice as likely as daily smokers to live in a home where no one smokes inside. Few youth who live in a home where three or more people smoke inside were never smokers who have never seriously thought about smoking (3%). There were no major differences between grades or between males and females in this relationship.

When considered from a different perspective (Figure 5-B), of all youth in grades 5-9 who reported that no one smokes inside their home, 3% were daily smokers, 5% were smoked beyond puffing, not daily smokers, 9% were puffers, 8% were never smokers who have seriously thought about smoking, and 76% were never smokers who have never seriously thought about smoking. Conversely, of all youth in grades 5-9 who reported that three or more people smoke inside their home, 20% were daily smokers, 15% were smoked beyond puffing, not daily smokers, 16% were puffers, 7% were never smokers who have seriously thought about smoking, and 42% were never smokers who have never seriously thought about smoking.

Table 5-7b provides details of the relationship found in the 1994 YSS between the smoking behaviour of youth and the number of people who smoke inside their home. From 1994 to 2002, the percentage of youth living in a home where no one smokes inside increased by 19%. The percentage of youth living in a home where no one smokes inside the home increased among males, females, and all grades of youth from 1994 to 2002.

Figure 5-B
Category of Smoker, by Number of Smokers Inside the Home, Grades 5-9, Canada, Youth Smoking Survey 2002



Youth Smoking Inside the Home

There is a strong relationship between youth ever smoking at home and the smoking behaviour of youth (Table 5-B). Among all youth smokers in the 2002 YSS, 58% of daily smokers reported they have ever smoked inside their home, and 24% of smoked beyond puffing, not daily smokers reported they have ever smoked inside their home. However, youth were not asked whether parents were present at the time. There were no major differences between males and females in this relationship.

Table 5-B
Ever Smoked at Home, by Grade, Sex, and Category of Smoking Behaviour, Canada, Youth Smoking Survey 2002

	Ever Smoked at Home (%)	
	Daily Smoker	Smoked Beyond Puffing, Not Daily Smoker
Total, Grades 5-9	**57.9**	**23.7**
5-6	#	#
7-9	58.0	23.9
Males, Grades 5-9	**57.1**	**22.9**
5-6	#	#
7-9	58.5	22.0
Females, Grades 5-9	**58.6**	**24.6**
5-6	#	#
7-9	57.6	25.8

# Data suppressed due to high sampling variability

DISCUSSION

The findings of the 2002 YSS demonstrate that youth exposed to friends and family members who smoke are at increased risk for smoking. These findings are consistent with the results presented in the 1994 YSS[1] and support the often observed relationships between youth smoking and the smoking behaviour of important social models in the environment.[2-4] Smoking friends and family members can influence a youth in many ways. For instance, youth who are surrounded by smoking friends and family members are more likely to think smoking is normative and acceptable,[5] more likely to be provided with social sources of cigarettes that can be used for experimenting with smoking,[6] and more likely to believe that social prestige or popularity can be improved by smoking.[7] These desirable outcomes being modelled by smokers in the social environment can make a non-smoking youth more apt to try smoking.[8]

An overall trend emerges when changes between the 1994 YSS and the 2002 YSS are examined; youth in 2002 were exposed to fewer friends and family members who smoke than youth in 1994. Fewer youth reported having close friends who smoke, parents who smoke, or living in a home where people smoke inside. Although youth exposure to smoking social models is declining, additional effort is required to further reduce youth exposure to smoking social models and to make more homes smoke-free. Youth smoking rates in Canada have declined from 1994 to 2002 (refer to Chapter 3 for a thorough discussion of youth smoking behaviour). It is possible that a portion of the decline may be a result of reductions in the number of smoking social models to which youth are exposed.

The relationship identified between having friends who smoke and youth smoking behaviour in the 2002 YSS is consistent with findings from numerous cross-sectional and longitudinal studies of smoking onset[2-4] and the 1994 YSS.[1] Youth with friends who smoke are more likely to smoke than youth with friends who do not smoke. This relationship is magnified as the number of friends who smoke increases; the more smoking friends a youth has, the more likely the youth is to smoke. Although the percentage of youth with friends who smoke has declined since the 1994 YSS, there is still a strong relationship between friend smoking and youth smoking habits, as evidenced by the findings of the 2002 YSS.

The relationship between friends' smoking and youth smoking status should be interpreted with caution for at least two reasons. First, the relationship between self-reports of others' smoking needs to be interpreted with caution because one's own smoking behaviour may bias one's report of other's smoking behaviour.[9] Second, due to the cross-sectional nature of these data, it is not possible to determine if the smoking habits of close friends cause a youth to smoke (peer socialization), or if youth become smokers because of self-selection into a smoking peer-group (peer selection).[10] Findings from longitudinal research indicate that certain youth populations are influenced through socialization with smoking friends and others are influenced by self-selection into a smoking peer group.[11] As such, prevention programs that only focus on peer resistance skills would not be sufficient for all youth. Additional research is required to examine these underlying mechanisms so that more appropriate prevention interventions can be developed.

The influence of parents or others (e.g., siblings) inside the home is also important. Consistent with the existing literature[2-4] and the 1994 YSS,[1] youth are more likely to smoke if their father, mother, or someone else inside their home smokes. This finding supports the notion that home smoking restrictions can be an important prevention intervention for youth.[4] Not only do home smoking restrictions prevent youth from being exposed to harmful environmental tobacco smoke,[12] they also have been shown to reduce smoking uptake in youth.[13] If people are not allowed to smoke inside the home, it sends a clear message to youth that smoking is a socially unacceptable and non-normative behaviour.[8] Processes by which homes move from smoking to smoke-free status have begun to be reported.[14]

Most youth smokers reported that their parents are not aware of their smoking. Even when parents are aware that their child smokes, a substantial portion seem to be indifferent about their child's smoking behaviour. This is especially true among male youth and their fathers, and female youth and their mothers. Parents should be encouraged to talk to their children about smoking and provide support in helping smoking children to stop smoking. Even among parents who smoke, talking with their children about the effects of smoking reduces the likelihood of the child starting to smoke.[15]

Care must be taken not to over interpret the relationships described above. For example, although there is a clear relationship between having close friends who smoke and youth smoking status, the direction of the relationship can not be inferred due to the cross-sectional nature of the data. Specifically, these data are unable to distinguish whether or not the smoking habits of friends influence youth to begin smoking or whether youth who smoke become friends with other youth smokers. These data also do not allow the temporal sequence of the relationships between youth smoking status and parental smoking or smoking inside the home to be determined. The same concerns pertain to the 1994 YSS.

Implications for Regulation and Legislation

While the prevalence of smoking has decreased since 1994, there is still a strong relationship between having close friends who smoke or a parent who smokes and youth smoking behaviour. The relationship between friend smoking and youth smoking suggests the need for regulations in places where youth congregate, such as malls, schools and areas surrounding schools. Such regulations would limit the opportunities that youth have to smoke with their friends, decrease the opportunities for younger youth to see older youth smoking, limit the social exchange of cigarettes among youth experimenting with smoking, and reduce the perception that smoking is a normative acceptable behaviour. The relationship between parental smoking and youth smoking suggests the need for regulations in places where youth are exposed to their parents' smoking. This may include inside the home or inside vehicles. Such regulations would protect youth from being exposed to environmental tobacco smoke and send a clear message to youth that smoking is a non-normative and socially undesirable behaviour. Note that regulations regarding where people can smoke fall under provincial jurisdiction and are not covered under the federal Tobacco Act.

Refer to Chapter 10 for a thorough discussion of restrictions and youth smoking.

Implications for Education and Message Promotion

The youth surveyed in the 1994 YSS were part of the first generation of Canadian youth to be targeted with school-based smoking prevention programming.[1] Since 1994, school-based prevention programs have been evolving and expanded in order to address another generation of Canadian youth.[16] Although the findings of the 2002 YSS suggest that youth are exposed to fewer smoking social models than were the youth surveyed in 1994, a large number of smoking social models remain within the immediate social environment surrounding youth. As such, it is important to continue providing youth with school-based smoking prevention education and message campaigns designed to teach youth how to resist the influence of the smoking social models in their environment.

School-based campaigns are the most common channel used for education and message promotion with youth.[17] There are many different approaches that can be used within a school-based setting, however, research has identified that the most appropriate and effective are social influences programming.[17] Social influences programming focuses on teaching youth how to build the skills needed to recognize and resist negative influences for smoking, including recognition of advertising tactics and peer influences, communication and decision-making skills, and assertiveness.[17-18] Research has shown that social influences interventions can have a significant effect in reducing the onset and level of tobacco use among youth who attend a school with a high rate of smoking among older students.[19] In order to have the most impact, school based campaigns need to begin early (as early as grade 5 to get students before they start smoking) and continually reinforced and maintained until students finish secondary school.

Education and message promotion does not have to be restricted to school-based initiatives. The media or community-based programs can also be used to communicate messages to youth about social influences for smoking.[20] Using a comprehensive approach for education and message promotion can improve the reach of programming activities.

The 1994 YSS technical report recommended that education programs and messages needed to be tailored to specific audiences.[1] The findings of the 2002 YSS provide additional support for this recommendation. Considering that smoking and non-smoking youth do not have the same exposure to smoking role models, it does not seem efficient or practical to assume that a 'one size fits all' approach to education and message promotion will be suitable. Different programs need to be crafted to be appropriate for various categories of smoking youth and then these programs need to be targeted to the appropriate groups.[21] The goal should be to target initiatives to the youth populations who are most likely to respond. For example, never smokers might benefit from a different social influence prevention program than puffers. The benefits of using a targeted approach to intervention delivery has been previously demonstrated with school-based smoking prevention programming.[15,22]

Implications for Future Monitoring and Further Research

The findings of the 2002 YSS suggest some promising areas for future monitoring. Ongoing monitoring and surveillance is required in order to replicate these findings and determine *if* and *how* the identified relationships change as youth age, and also, whether these relationships are maintained in succeeding cohorts of youth. By continually monitoring the smoking behaviour of youth, practitioners and researchers would have the ability to identify how different social models may exert differential influences on youth as they progress though school. For instance, not only would close friends exert different types of influences at different grades (since youth in earlier grades are generally not exposed to as many friends who smoke), the influence of close friends who smoke may have a different influence in maintaining old friendships or developing new friendships for certain youth as they move form grade to grade. A good example would be when youth move through the transition from elementary school to high school. At this time, some youth would be exposed to a potentially new social group of smoking and non-smoking youth.

An area for further research is to collect longitudinal data about the friends and family members of youth who are important social influences. For example, the 2002 YSS data do not enable us to understand if smoking friends influence smoking onset via peer socialization or peer selection, that is, the causal relationships between youth and peer smoking. This knowledge could have a large impact on intervention development as different initiatives would be required to address the causal mechanisms for peer socialization versus the causal mechanisms of peer selection.

A second area for further research would be to examine the characteristics that differentiate sub-populations of youth. For example, a large number of youth who are exposed to smoking friends and family members remain smoke-free ('low-risk' youth), while many youth who are not exposed to smoking friends and family members become smokers ('high-risk' youth). Determining how 'low-risk' youth are able to resist social influences could inform the development of new prevention initiatives designed for youth who are unable to resist social influences. Conversely, it would also be beneficial to identify the characteristics of high-risk youth who smoke but do not appear to be influenced by social models. This information could be used to identify high-risk students who have not yet started smoking, so that they can be targeted with additional support from prevention resources. It is likely that a motivation-skills-decision making program would be relatively effective for such youth.[22]

Other life factors may interact with social influences, and these should be explored. For example, the present data indicate and replicate a consistent inverse relationship between smoking and socio-economic status.[23] However, little work has investigated how changes in socio-economic status might be related to smoking. In fact, stresses related to parental drops in socio-economic status may be related to youth uptake of smoking.[23] These changes in status may alter the operation of social influences on youth, perhaps making them more vulnerable. Instruction in stress-coping skills may be helpful to youth who have suffered economic loss.

Finally, future research might also benefit by considering social influences other than friends and family members. For example, an emerging body of literature is demonstrating that role models in the media, via movies, television, and advertising is related to youth smoking behaviour.[24-25] Research is also beginning to demonstrate that social modelling characteristics of the school a student attends is related to youth smoking behaviour.[21,26-27] A better understanding of how these broader social influences are related to youth smoking behaviour, will enable the development of more effective social influences prevention programs.

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Table 5-1a
Number of Close Friends Who Smoke, by Grade, Sex, and Category of Smoker, Canada, Youth Smoking Survey 2002

	Pop. Est. ('000)	Number of Close Friends Who Smoke (%)			
		0	1-2	3-4	≥5
Total, Grades 5-9	**1,785**	**72.0**	**15.1**	**5.1**	**7.8**
Daily Smoker	87	9.8*	24.5	22.6	43.1
Smoked Beyond Puffing, Not Daily Smoker	142	29.6	32.9	14.9	22.6
Puffer	192	49.1	27.9	9.6	13.4
Never Smoker (a)	148	62.8	24.2	5.6*	7.4
Never Smoker (b)	1,216	86.2	9.2	2.0	2.6
Grades 5-6	**683**	**87.5**	**7.9**	**1.8**	**2.8**
Daily Smoker	5	#	#	#	#
Smoked Beyond Puffing, Not Daily Smoker	18	37.0*	30.7*	#	#
Puffer	41	63.9	23.3	#	#
Never Smoker (a)	49	74.7	16.7*	#	#
Never Smoker (b)	570	92.6	5.2	0.8*	1.4*
Grades 7-9	**1,102**	**62.5**	**19.5**	**7.2**	**10.8**
Daily Smoker	82	9.9*	24.2	22.9	43.0
Smoked Beyond Puffing, Not Daily Smoker	124	28.5	33.2	15.4	22.9
Puffer	150	45.0	29.2	10.6	15.2
Never Smoker (a)	100	57.0	27.8	6.3*	8.9*
Never Smoker (b)	646	80.6	12.8	2.9	3.7
Males, Grades 5-9	**896**	**72.8**	**14.4**	**5.1**	**7.7**
Daily Smoker	36	10.8*	23.2	18.5*	47.5
Smoked Beyond Puffing, Not Daily Smoker	74	32.9	29.7	16.3	21.1
Puffer	104	53.1	23.6	10.0	13.3
Never Smoker (a)	75	67.3	21.3	4.9*	6.5*
Never Smoker (b)	607	85.4	9.5	2.1	3.0
Grades 5-6	**341**	**88.2**	**7.4**	**2.0**	**2.4**
Daily Smoker	3	#	#	#	#
Smoked Beyond Puffing, Not Daily Smoker	9	#	#	#	#
Puffer	24	71.7	#	#	#
Never Smoker (a)	25	78.2	#	#	#
Never Smoker (b)	280	92.8	4.9	#	#
Grades 7-9	**556**	**63.4**	**18.6**	**7.0**	**11**
Daily Smoker	34	#	21.4*	19.2*	48.8
Smoked Beyond Puffing, Not Daily Smoker	64	31.8	29.7	16.7	21.8
Puffer	81	47.6	26.0	10.7*	15.7
Never Smoker (a)	50	61.9	24.2	5.9*	#
Never Smoker (b)	327	79.1	13.5	3.1*	4.3
Females, Grades 5-9	**889**	**71.3**	**15.8**	**5.1**	**7.7**
Daily Smoker	51	9.1*	25.4	25.6	39.9
Smoked Beyond Puffing, Not Daily Smoker	68	26.0	36.3	13.5	24.2
Puffer	88	44.4	33.1	9.0*	13.5

Never Smoker (a)	73	58.1	27.2	6.3*	8.4*
Never Smoker (b)	609	87.0	8.9	1.8	2.3
Grades 5-6	**342**	**86.8**	**8.5**	**1.5**	**3.2**
Daily Smoker	3	#	#	#	#
Smoked Beyond Puffing, Not Daily Smoker	9	#	#	#	#
Puffer	17	53.5	33.8*	#	#
Never Smoker (a)	23	70.9	18.0*	#	#
Never Smoker (b)	290	92.4	5.5	#	#
Grades 7-9	**547**	**61.5**	**20.4**	**7.4**	**10.7**
Daily Smoker	49	9.5*	26.1	25.5	38.9
Smoked Beyond Puffing, Not Daily Smoker	60	25.0	37.0	14.1*	23.9
Puffer	70	42.1	32.9	10.5*	14.5
Never Smoker (a)	49	52.1	31.5	#	9.7*
Never Smoker (b)	319	82.1	12.0	2.8*	3.1*

* Moderate sampling variability; interpret with caution
# Data suppressed due to high sampling variability
(a) Never Smoker who has Seriously Thought About Smoking
(b) Never Smoker who has Never Seriously Thought About Smoking

Table 5-1b
Number of Close Friends Who Smoke, by Grade, Sex, and Category of Smoker, Canada, Youth Smoking Survey 1994

	Pop. Est. ('000)	Number of Close Friends Who Smoke (%)			
		0	1-2	3-4	≥5
Total, Grades 5-9	**1,775**	**54.1**	**22.2**	**10.2**	**13.5**
Daily Smoker	83	#	20.4*	21.6*	56.0
Smoked Beyond Puffing, Not Daily Smoker	406	17.9	33.6	22.0	26.6
Puffer	254	44.6	31.7	12.3	11.4
Never Smoker (a)	159	56.6	24.3	7.9*	11.2*
Never Smoker (b)	873	78.2	14.0	3.4	4.4
Grades 5-6	**667**	**73.0**	**17.0**	**4.5**	**5.5**
Daily Smoker	4	#	#	#	#
Smoked Beyond Puffing, Not Daily Smoker	66	25.6*	39.3	15.0*	19.1*
Puffer	83	50.9	29.6	9.8*	9.7*
Never Smoker (a)	62	72.5	17.2*	#	9.3*
Never Smoker (b)	452	84.4	11.3	1.6*	2.7*
Grades 7-9	**1,108**	**42.7**	**25.4**	**13.6**	**18.3**
Daily Smoker	79	#	19.6*	22.0*	57.0
Smoked Beyond Puffing, Not Daily Smoker	340	16.2	32.5	23.3	28.0
Puffer	171	41.5	32.7	13.5	12.3*
Never Smoker (a)	98	46.6	28.7	8.5*	16.2*
Never Smoker (b)	420	71.4	16.9	5.5*	6.2
Males, Grades 5-9	**887**	**55.3**	**21.3**	**8.8**	**14.6**
Daily Smoker	39	#	16.5*	22.5*	57.5
Smoked Beyond Puffing, Not Daily Smoker	204	21.2	32.0	19.1	27.7
Puffer	137	46.1	31.2	10.2	12.5*
Never Smoker (a)	76	59.4	18.5*	8.1*	14.0*
Never Smoker (b)	431	78.2	14.0	2.4*	5.4*
Grades 5-6	**336**	**71.4**	**17.8**	**4.2**	**6.6**
Daily Smoker	2	#	#	#	#
Smoked Beyond Puffing, Not Daily Smoker	42	31.3*	34.9*	13.3*	20.5*
Puffer	46	51.5	28.2*	#	11.3*
Never Smoker (a)	30	76.2	#	#	#
Never Smoker (b)	216	83.3	12.8	#	3.0*
Grades 7-9	**550**	**45.4**	**23.4**	**11.6**	**19.6**
Daily Smoker	36	#	14.1*	23.8*	59.5
Smoked Beyond Puffing, Not Daily Smoker	162	18.7	31.2	20.5	29.6
Puffer	91	43.3	32.7	10.9*	13.1*
Never Smoker (a)	47	48.4	22.9*	#	20.4*
Never Smoker (b)	214	73.1	15.1	3.9*	7.9*
Females, Grades 5-9	**888**	**52.9**	**23.2**	**11.6**	**12.3**
Daily Smoker	44	#	23.9*	20.9*	54.7
Smoked Beyond Puffing, Not Daily Smoker	203	14.5	35.2	24.9	25.4
Puffer	117	42.9	32.2	14.7	10.2*

Never Smoker (a)	83	54.1	29.6	7.7*	8.6
Never Smoker (b)	441	78.2	14.0	4.5*	3.3*
Grades 5-6	**330**	**74.6**	**16.2**	**4.9**	**4.3**
Daily Smoker	1	#	#	#	#
Smoked Beyond Puffing, Not Daily Smoker	25	#	46.7*	#	#
Puffer	37	50.3	31.3*	#	#
Never Smoker (a)	32	69.0	22.5*	#	#
Never Smoker (b)	236	85.6	9.8	#	#
Grades 7-9	**558**	**40.0**	**27.3**	**15.6**	**17.1**
Daily Smoker	43	#	24.3*	20.4*	54.9
Smoked Beyond Puffing, Not Daily Smoker	178	13.9	33.6	25.8	26.7
Puffer	80	39.5	32.7	16.5*	11.3*
Never Smoker (a)	51	44.9	34.1	#	12.4*
Never Smoker (b)	206	69.8	18.7	7.1*	4.4*

* Moderate sampling variability; interpret with caution
# Data suppressed due to high sampling variability
(a) Never Smoker who has Seriously Thought About Smoking
(b) Never Smoker who has Never Seriously Thought About Smoking

Table 5-2a
Father Smokes, by Category of Smoker, Grade, and Sex, Canada, Youth Smoking Survey 2002

		Category of Smoker (%)				
Grade	Pop. Est. ('000)	Daily Smoker	Smoked Beyond Puffing, Not Daily Smoker	Puffer	Never Smoker (a)	Never Smoker (b)
Father Smokes						
Total, 5-9	**553**	**7.7**	**11.2**	**12.9**	**8.8**	**59.4**
5-6	209	#	4.6*	8.8	9.1	76.3
7-9	344	11.6	15.2	15.4	8.6	49.2
Males, 5-9	**274**	**6.2**	**10.9**	**13.1**	**9.6**	**60.2**
5-6	107	#	4.8*	9.0	9.5	75.6
7-9	167	9.4	14.8	15.8	9.7	50.3
Females, 5-9	**279**	**9.1**	**11.5**	**12.7**	**8.0**	**58.7**
5-6	103	#	4.4*	8.6*	8.7*	77.0
7-9	176	13.6	15.7	15.1	7.6	48.0
Father Does Not Smoke						
Total, 5-9	**1,336**	**3.3**	**5.7**	**9.0**	**8.1**	**73.9**
5-6	534	#	1.3*	4.0	6.4	87.9
7-9	802	5.2	8.8	12.3	9.2	64.5
Males, 5-9	**696**	**2.7**	**6.2**	**9.7**	**8.0**	**73.4**
5-6	274	#	#	4.8	6.9	86.3
7-9	422	4.1	9.2	12.9	8.7	65.1
Females, 5-9	**640**	**3.9**	**5.3**	**8.2**	**8.3**	**74.3**
5-6	260	#	#	3.1*	5.9	89.6
7-9	380	6.4	8.2	11.6	9.9	63.9

* Moderate sampling variability; interpret with caution
# Data suppressed due to high sampling variability
(a) Never Smoker who has Seriously Thought About Smoking
(b) Never Smoker who has Never Seriously Thought about Smoking

Table 5-2b
Father Smokes, by Category of Smoker, and Father's Education Level, Canada, Youth Smoking Survey 2002

Category of Smoker	Father's Education Level Among Youth Who Have a Father Who Smokes (%) Grade 1-10	Grade 11-13, Some Post-Secondary, Or College Diploma	University Undergraduate or Graduate Degree
All Youth	**39.0**	**29.5**	**13.2**
Daily Smoker	51.3	44.2	#
Smoked Beyond Puffing, Not Daily Smoker	48.0	46.8	27.1
Puffer	43.0	35.9	16.3
Never Smoker (a)	#	31.6	15.3
Never Smoker (b)	36.2	25.7	11.6

# Data suppressed due to high sampling variability
(a) Never Smoker who has Seriously Thought About Smoking
(b) Never Smoker who has Never Seriously Thought About Smoking

Table 5-2c
Father Smokes, by Category of Smoker, Grade, and Sex, Canada, Youth Smoking Survey 1994

Grade	Pop. Est. ('000)	Category of Smoker (%) Daily Smoker	Smoked Beyond Puffing, Not Daily Smoker	Puffer	Never Smoker (a)	Never Smoker (b)
Father Smokes						
Total, 5-9	**673**	**6.8**	**27.3**	**15.8**	**7.7**	**42.4**
5-6	257	#	15.0	14.6	8.3*	61.4
7-9	416	10.5	35.0	16.6	7.3	30.6
Males, 5-9	**334**	**5.2**	**27.9**	**16.9**	**7.6**	**42.4**
5-6	134	#	17.8	17.2	8.9*	55.5
7-9	200	8.3	34.7	16.7	6.8	33.5
Females, 5-9	**339**	**8.3**	**26.8**	**14.8**	**7.8**	**42.3**
5-6	123	#	12.0*	11.7*	7.5*	67.8
7-9	216	12.5	35.3	16.5	7.9*	27.8
Father Does Not Smoke						
Total, 5-9	**1,257**	**3.1**	**19.3**	**12.9**	**9.8**	**54.9**
5-6	481	#	6.4	10.4	9.7	73.1
7-9	776	4.8	27.4	14.4	9.9	43.5
Males, 5-9	**653**	**3.4***	**19.2**	**13.6**	**8.9**	**54.9**
5-6	249	#	8.0*	10.5	8.6*	72.4

7-9	404	5.1*	26.1	15.6	9.1	44.1
Females, 5-9	**604**	**2.8**	**19.5**	**12.1**	**10.8**	**54.8**
5-6	232	#	4.6*	10.4	10.9	74.0
7-9	372	4.4*	28.8	13.1	10.8	42.9

* Moderate sampling variability; interpret with caution
# Data suppressed due to high sampling variability
(b) Never Smoker who has Seriously Thought About Smoking
(b) Never Smoker who has Never Seriously Thought About Smoking

Table 5-3
Father's Opinion of His Child's Smoking, by Grade, Sex, and Category of Smoking Behaviour, Canada, Youth Smoking Survey 2002

	Pop. Est. ('000)	Father's Opinion (%)		
		Approves or Does Not Care	Does Not Approve	Does Not Know
All Smokers, Grades 5-9	**101**	**17.0**	**26.6**	**56.4**
Daily Smoker	60	23.0	34.1	42.9
Smoked Beyond Puffing, Not Daily Smoker	40	7.8*	15.3*	76.9
Grades 5-6	6	#	#	72.6
Daily Smoker	2	#	#	#
Smoked Beyond Puffing, Not Daily Smoker	4	#	#	79.2
Grades 7-9	94	17.3	27.5	55.2
Daily Smoker	58	22.9	35.1	42.0
Smoked Beyond Puffing, Not Daily Smoker	36	#	15.2*	76.6
Male Smokers, Grade 5-9	**45**	**19.2**	**26.1**	**54.7**
Daily Smoker	25	27.5*	35.5	37.0
Smoked Beyond Puffing, Not Daily Smoker	20	8.9	#	77.0
Grades 5-6	3	#	#	#
Daily Smoker	1	#	#	#
Smoked Beyond Puffing, Not Daily Smoker	2	#	#	#
Grades 7-9	42	19.5*	26.5	54.0
Daily Smoker	24	27.3*	36.2	36.5
Smoked Beyond Puffing, Not Daily Smoker	18	#	#	77.6
Female Smokers, Grades 5-9	**55**	**15.1***	**27.1**	**57.8**
Daily Smoker	35	19.8*	33.1	47.1
Smoked Beyond Puffing, Not Daily Smoker	20	#	#	76.7
Grades 5-6	3	#	#	#
Daily Smoker	1	#	#	#
Smoked Beyond Puffing, Not Daily Smoker	2	#	#	#
Grades 7-9	52	15.4*	28.3	56.3
Daily Smoker	34	19.7*	34.3	46.0
Smoked Beyond Puffing, Not Daily Smoker	18	#	#	75.6

* Moderate sampling variability; interpret with caution
# Data suppressed due to high sampling variability

Table 5-4a
Mother Smokes, by Category of Smoker, Grade, and Sex, Canada, Youth Smoking Survey 2002

Grade	Pop. Est. ("000)	Category of Smoker (%) Daily Smoker	Smoked Beyond Puffing, Not Daily Smoker	Puffer	Never Smoker (a)	Never Smoker (b)
Mother Smokes						
Total, 5-9	**459**	**9.6**	**12.4**	**14.7**	**8.8**	**54.5**
5-6	172	#	5.1*	9.6	10.5	73.3
7-9	287	14.6	16.7	17.7	7.8	43.2
Males, 5-9	**223**	**7.5**	**11.0**	**15.3**	**9.5**	**56.7**
5-6	84	#	#	9.1*	10.6*	74.2
7-9	139	11.4	14.6	19.0	8.9	46.1
Females, 5-9	**236**	**11.7**	**13.7**	**14.1**	**8.1**	**52.4**
5-6	88	#	5.3*	10.0*	10.4*	72.5
7-9	148	17.6	18.7	16.5	6.8	40.4
Mother Does Not Smoke						
Total, 5-9	**1,499**	**3.1**	**6.0**	**8.9**	**8.1**	**73.9**
5-6	599	#	1.5*	4.5	6.2	87.3
7-9	900	4.8	9.0	11.8	9.4	65.0
Males, 5-9	**775**	**2.6**	**6.7**	**9.6**	**8.0**	**73.1**
5-6	309	#	1.8*	5.9	6.5	85.3
7-9	466	3.9	10.0	12.1	9.0	65.0
Females, 5-9	**724**	**3.6**	**5.3**	**8.1**	**8.3**	**74.7**
5-6	290	#	#	3.1*	5.8	89.5
7-9	434	5.8	8.0	11.4	9.9	64.9

* Moderate sampling variability; interpret with caution
# Data suppressed due to high sampling variability
(c) Never Smoker who has Seriously Thought About Smoking
(b) Never Smoker who has Never Seriously Thought Smoking

Table 5-4b
Mother Smokes, by Category of Smoker, and
Mother's Education Level, Canada, Youth Smoking Survey 2002

	Mother's Education Level Among Youth *Who Have a Mother Who Smokes (%)*		
Category of Smoker	Grade 1-10	Grade 11-13, Some Post-Secondary, or College Diploma	University Undergraduate or Graduate Degree
All Youth	**30.3**	**23.4**	**8.1**
Daily Smoker	55.2	40.2	#
Smoked Beyond Puffing, Not Daily Smoker	50.0	36.4	21.2
Puffer	39.1	32.9	12.3
Never Smoker (a)	#	24.2	8.2
Never Smoker (b)	21.2	19.7	6.5

# Data suppressed due to high sampling variability
(b) Never Smoker who has Seriously Thought About Smoking
(b) Never Smoker who has Never Seriously Thought About Smoking

Table 5-4c
Mother Smokes, by Category of Smoker,
Grade, and Sex, Canada, Youth Smoking Survey 1994

		Category of Smoker (%)				
Grade	Pop. Est. ('000)	Daily Smoker	Smoked Beyond Puffing, Not Daily Smoker	Puffer	Never Smoker (a)	Never Smoker (b)
Mother Smokes						
Total, 5-9	**571**	**8.1**	**29.1**	**16.7**	**7.8**	**38.3**
5-6	226	#	16.0	15.8	10.1	57.1
7-9	345	12.7	37.7	17.3	6.3*	26.0
Males, 5-9	**281**	**7.3***	**29.9**	**16.7***	**7.0***	**39.1**
5-6	117	#	19.7	16.9	9.0*	53.1
7-9	164	11.6*	37.1	16.5	5.6*	29.2
Females, 5-9	**290**	**8.8**	**28.4**	**16.8**	**8.6**	**37.4**
5-6	109	#	11.9*	14.6*	11.2*	61.5
7-9	181	13.6	38.3	18.1	7.0	23.0
Mother Does Not Smoke						
Total, 5-9	**1,361**	**2.8**	**19.2**	**12.7**	**9.6**	**55.7**
5-6	514	#	6.4	10.2	8.8	74.3
7-9	847	4.4	26.8	14.3	10.1	44.4
Males, 5-9	**706**	**2.7***	**19.0**	**14.0**	**9.0**	**55.3**
5-6	267	#	7.7*	11.1	8.5*	72.4
7-9	439	4.2*	25.8	15.8	9.3	44.9
Females, 5-9	**655**	**3.0**	**19.4**	**11.4**	**10.2**	**56.0**
5-6	247	#	5.1*	9.2	9.0*	76.4
7-9	408	4.7*	28.0	12.7	10.9	43.7

* Moderate sampling variability; interpret with caution
# Data suppressed due to high sampling variability
(d) Never Smoker who has Seriously Thought About Smoking
(b) Never Smoker who has Never Seriously Thought About Smoking

Table 5-5
Mother's Opinion of Her Child's Smoking, by Grade, Sex, and Category of Smoking Behaviour, Canada, Youth Smoking Survey 2002

		Mother's Opinion (%)		
	Pop. Est. ('000)	Approves or Does Not Care	Does Not Approve	Does Not Know
All Smokers, Grades 5-9	**107**	**16.4**	**33.1**	**50.5**
Daily Smoker	65	23.8	40.0	36.2
Smoked Beyond Puffing, Not Daily Smoker	42	#	22.7	72.1
Grades 5-6	7	#	#	65.3
Daily Smoker	3	#	#	#
Smoked Beyond Puffing, Not Daily Smoker	4	#	#	#
Grades 7-9	100	16.4	34.2	49.4
Daily Smoker	62	23.6	40.7	35.7
Smoked Beyond Puffing, Not Daily Smoker	38	#	23.8	71.5
Male Smokers, Grades 5-9	**47**	**14.9***	**34.5**	**50.6**
Daily Smoker	27	23.0*	43.5	33.5
Smoked Beyond Puffing, Not Daily Smoker	20	#	22.4*	73.3
Grades 5-6	3	#	#	#
Daily Smoker	1	#	#	#
Smoked Beyond Puffing, Not Daily Smoker	2	#	#	#
Grades 7-9	44	14.8*	35.2	50.0
Daily Smoker	26	22.8*	44.4	32.8
Smoked Beyond Puffing, Not Daily Smoker	18	#	#	73.8
Female Smokers, Grades 5-9	**61**	**17.5**	**32.1**	**50.4**
Daily Smoker	38	24.3	37.5	38.2
Smoked Beyond Puffing, Not Daily Smoker	23	#	23.0*	71.0
Grades 5-6	4	#	#	#
Daily Smoker	2	#	#	#
Smoked Beyond Puffing, Not Daily Smoker	2	#	#	#
Grades 7-9	56	17.5	33.5	49.0
Daily Smoker	36	24.1	38.2	37.7
Smoked Beyond Puffing, Not Daily Smoker	20	#	25.0*	69.4

* Moderate sampling variability; interpret with caution
# Data suppressed due to high sampling variability

Table 5-6a
Combined Influence of Both Parents Smoking, by Grade, Sex, and Category of Smoker, Canada, Youth Smoking Survey 2002

	Pop. Est. ('000)	Parental Smoking (%)			
		Both Smoke	Father Smokes Only	Mother Smokes Only	Neither Smokes
Total, Grades 5-9	**1,866**	**13.5**	**15.5**	**9.4**	**61.4**
Daily Smoker	85	31.6	17.6	16.8	34.0
Smoked Beyond Puffing, Not Daily Smoker	136	24.2	20.4	13.4	42.0
Puffer	189	17.0	20.0	16.3	46.7
Never Smoker (a)	155	14.3	16.7	10.0	59.0
Never Smoker (b)	1,301	10.7	14.1	7.5	67.7
Grades 5-6	**732**	**13.0**	**14.8**	**8.7**	**63.5**
Daily Smoker	5	#	#	#	#
Smoked Beyond Puffing, Not Daily Smoker	16	36.4*	#	#	28.8*
Puffer	39	20.3*	24.8	14.1*	40.8
Never Smoker (a)	52	20.2	15.9*	12.2*	51.7
Never Smoker (b)	620	11.1	13.9	8.0	67.0
Grades 7-9	**1,134**	**13.9**	**15.9**	**9.8**	**60.4**
Daily Smoker	80	31.2	17.8	17.5	33.5
Smoked Beyond Puffing, Not Daily Smoker	120	22.5	20.2	13.3	44.0
Puffer	150	15.9	18.7	16.9	48.5
Never Smoker (a)	103	11.2	17.1	8.8*	62.9
Never Smoker (b)	681	10.3	14.2	6.9	68.6
Males, Grades 5-9	**957**	**12.5**	**15.5**	**9.2**	**62.8**
Daily Smoker	35	26.6	20.9*	17.7*	34.8
Smoked Beyond Puffing, Not Daily Smoker	71	19.0	21.9	11.5*	47.6
Puffer	102	15.2	19.1	15.5	50.2
Never Smoker (a)	80	14.7	17.6	10.0*	57.7
Never Smoker (b)	669	10.4	13.8	7.4	68.4
Grades 5-6	**375**	**12.2**	**15.5**	**8.5**	**63.8**
Daily Smoker	3	#	#	#	#
Smoked Beyond Puffing, Not Daily Smoker	9	#	#	#	#
Puffer	22	#	27.1*	#	47.9
Never Smoker (a)	28	17.8*	17.9*	#	51.7
Never Smoker (b)	313	10.8	14.3	7.9	67.0
Grades 7-9	**582**	**12.7**	**15.5**	**9.6**	**62.2**
Daily Smoker	32	26.4	21.2*	18.6*	33.8
Smoked Beyond Puffing, Not Daily Smoker	62	17.2	21.8	11.3*	49.7
Puffer	80	15.6	16.8	16.9	50.7
Never Smoker (a)	52	12.9*	17.4	8.8*	60.9
Never Smoker (b)	356	10.0	13.4	7.0	69.6
Females, Grades 5-9	**909**	**14.6**	**15.5**	**9.6**	**60.3**
Daily Smoker	50	35.0	15.3*	16.2*	33.5
Smoked Beyond Puffing, Not Daily Smoker	65	29.5	18.6	15.2	36.7

Puffer	87	18.8	21.0	17.2	43.0
Never Smoker (a)	75	13.8	15.8	9.7*	60.7
Never Smoker (b)	632	11.0	14.4	7.5	67.1
Grades 5-6	**357**	**13.8**	**14.0**	**8.9**	**63.3**
Daily Smoker	2	#	#	#	#
Smoked Beyond Puffing, Not Daily Smoker	7	#	#	#	#
Puffer	17	28.9*	#	#	29.8*
Never Smoker (a)	24	23.1*	#	#	51.0
Never Smoker (b)	307	11.4	13.6	8.1	66.9
Grades 7-9	**552**	**15.1**	**16.4**	**10.0**	**58.5**
Daily Smoker	48	34.5	15.5*	16.7*	33.3
Smoked Beyond Puffing, Not Daily Smoker	58	28.1	18.5	15.4*	38.0
Puffer	70	16.4	20.8	16.9	45.9
Never Smoker (a)	51	9.5*	16.9*	8.7*	64.9
Never Smoker (b)	325	10.6	15.1	6.9	67.4

* Moderate sampling variability; interpret with caution

# Data suppressed due to high sampling variability

(a) Never Smoker who has Seriously Thought About Smoking

(b) Never Smoker who has Never Seriously Thought About Smoking

Table 5-6b
Combined Influence of Both Parents Smoking, by Grade, Sex, and Category of Smoker, Canada, Youth Smoking Survey 1994

	Pop. Est. ('000)	Parental Smoking (%)			
		Both Smoke	Father Smokes Only	Mother Smokes Only	Neither Smokes
Total, Grades 5-9	**1,930**	**17.2**	**17.8**	**12.4**	**52.6**
Daily Smoker	85	36.5	17.3*	17.9*	28.3
Smoked Beyond Puffing, Not Daily Smoker	427	22.7	20.5	16.3	40.5
Puffer	269	20.3	19.4	15.1	45.2
Never Smoker (a)	175	14.3	15.3	11.2*	59.2
Never Smoker (b)	974	12.7	16.6	9.7	61.0
Grades 5-6	**738**	**17.8**	**17.2**	**12.7**	**52.3**
Daily Smoker	4	#	#	#	#
Smoked Beyond Puffing, Not Daily Smoker	69	33.8	22.3*	18.3*	25.6*
Puffer	87	22.2*	20.5*	18.3*	39.0
Never Smoker (a)	68	17.0*	14.3*	16.5*	52.2
Never Smoker (b)	510	14.7	16.3	10.5	58.5
Grades 7-9	**1,192**	**16.8**	**18.1**	**12.2**	**52.9**
Daily Smoker	81	36.3	17.7*	17.8*	28.2
Smoked Beyond Puffing, Not Daily Smoker	358	20.5	20.2	15.9	43.4
Puffer	181	19.4	18.8	13.6	48.2
Never Smoker (a)	107	12.6*	15.9*	7.9*	63.6
Never Smoker (b)	465	10.5	16.9	8.8	63.8
Males, Grades 5-9	**986**	**16.3**	**17.6**	**12.2**	**53.9**
Daily Smoker	40	30.0*	13.9*	22.0*	34.1*
Smoked Beyond Puffing, Not Daily Smoker	218	21.9	20.9	16.7	40.5
Puffer	145	18.5	20.3	13.6*	47.6
Never Smoker (a)	83	15.0*	15.6*	8.8*	60.6
Never Smoker (b)	500	12.4	16.0	9.6	62.0
Grades 5-6	**383**	**17.9**	**17.2**	**12.6**	**52.3**
Daily Smoker	2	#	#	#	#
Smoked Beyond Puffing, Not Daily Smoker	44	30.6*	24.3*	22.4*	22.7*
Puffer	49	24.3*	22.7*	15.7*	37.3
Never Smoker (a)	33	19.5*	16.5*	#	51.9
Never Smoker (b)	255	14.1	15.2	10.2	60.5
Grades 7-9	**603**	**15.4**	**17.8**	**11.9**	**54.9**
Daily Smoker	38	29.8*	14.7*	21.4*	34.1*
Smoked Beyond Puffing, Not Daily Smoker	174	19.7	20.1	15.2	45.0
Puffer	96	15.6	19.1	12.5	52.8
Never Smoker (a)	50	12.0*	15.0*	#	66.4
Never Smoker (b)	245	10.6	16.8	8.9	63.7
Females, Grades 5-9	**943**	**18.0**	**17.9**	**12.6**	**51.5**
Daily Smoker	45	42.2	20.4*	14.2*	23.2*
Smoked Beyond Puffing, Not Daily Smoker	209	23.5	20.1	15.9	40.5

Puffer	123	22.4	18.3	17.0	42.3
Never Smoker (a)	91	13.7*	15.0*	13.4*	57.9
Never Smoker (b)	475	13.0	17.2	9.7	60.1
Grades 5-6	**355**	**17.6**	**17.1**	**12.9**	**52.4**
Daily Smoker	2	#	#	#	#
Smoked Beyond Puffing, Not Daily Smoker	25	39.4*	#	#	30.4*
Puffer	38	19.5*	17.8*	21.5*	41.2
Never Smoker (a)	35	#	#	20.8*	52.3
Never Smoker (b)	255	15.3	17.5	10.7	56.5
Grades 7-9	**589**	**18.3**	**18.4**	**12.5**	**50.8**
Daily Smoker	44	41.8	20.3	14.6*	23.3
Smoked Beyond Puffing, Not Daily Smoker	184	21.3	20.2	16.5	42.0
Puffer	84	23.8	18.5*	14.9*	42.8
Never Smoker (a)	57	13.1*	16.7*	#	61.2
Never Smoker (b)	220	10.4	17.0	8.6*	64.0

* Moderate sampling variability; interpret with caution
# Data suppressed due to high sampling variability
(a) Never Smoker who has Seriously Thought About Smoking
(b) Never Smoker who has Never Seriously Thought About Smoking

Table 5-7a
Number of Smokers Inside the Home, by Grade, Sex, and Category of Smoker, Canada, Youth Smoking Survey 2002

	Pop. Est. ('000)	Number of Smokers in the Home (%)		
		None	1-2	3 or more
Total, Grades 5-9	**2,012**	**70.0**	**24.7**	**5.3**
Daily Smoker	94	36.7	40.3	23.0
Smoked Beyond Puffing, Not Daily Smoker	154	48.1	4.1*	10.8
Puffer	206	56.3	35.6	8.1
Never Smoker (a)	167	67.7	27.4	4.9*
Never Smoker (b)	1,391	76.9	19.9	3.2
Grades 5-6	**792**	71.8	23.4	4.8
Daily Smoker	6	#	46.7*	#
Smoked Beyond Puffing, Not Daily Smoker	19	34.8*	53.2	#
Puffer	44	52.5	36.5	11.0*
Never Smoker (a)	56	59.7	31.0	9.3*
Never Smoker (b)	667	75.4	20.8	3.8
Grades 7-9	**1,220**	68.8	25.5	5.7
Daily Smoker	88	36.6	39.9	23.5
Smoked Beyond Puffing, Not Daily Smoker	135	50.0	39.4	10.6
Puffer	162	57.3	35.4	7.3
Never Smoker (a)	111	71.7	25.6	#
Never Smoker (b)	724	78.4	19.0	2.6
Males, Grades 5-9	**1,030**	**70.3**	**24.6**	**5.1**
Daily Smoker	39	36.3	39.6	24.1
Smoked Beyond Puffing, Not Daily Smoker	81	52.0	39.8	8.2*
Puffer	112	58.8	32.6	8.6*
Never Smoker (a)	87	65.8	28.8	5.4*
Never Smoker (b)	711	76.6	20.3	3.1
Grades 5-6	**403**	71.4	23.6	5.0
Daily Smoker	3	#	#	#
Smoked Beyond Puffing, Not Daily Smoker	10	43.6*	46.0*	#
Puffer	25	61.8	25.8*	#
Never Smoker (a)	30	60.3	29.7	#
Never Smoker (b)	335	74.1	22.1	3.8
Grades 7-9	**627**	69.6	25.2	5.2
Daily Smoker	36	35.0	39.8	25.2
Smoked Beyond Puffing, Not Daily Smoker	71	53.2	38.9	7.9*
Puffer	87	58.0	34.6	7.4*
Never Smoker (a)	57	68.7	28.4	#
Never Smoker (b)	376	78.9	18.6	2.5*
Females, Grade 5-9	**982**	**69.6**	**24.8**	**5.6**
Daily Smoker	55	37.0	40.8	22.2
Smoked Beyond Puffing, Not Daily Smoker	73	43.8	42.6	13.6
Puffer	94	53.4	39.1	7.5*

Never Smoker (a)	80	69.7	25.9	#
Never Smoker (b)	680	77.3	19.5	3.2
Grades 5-6	**389**	72.2	23.1	4.7
Daily Smoker	3	#	#	#
Smoked Beyond Puffing, Not Daily Smoker	9	#	61.7	#
Puffer	19	40.2	50.7	#
Never Smoker (a)	26	59.1	32.5	#
Never Smoker (b)	332	76.7	19.5	3.8
Grades 7-9	**593**	68.0	25.9	6.1
Daily Smoker	52	37.6	39.9	22.5
Smoked Beyond Puffing, Not Daily Smoker	64	46.4	40.1	13.5*
Puffer	75	56.6	36.3	7.1*
Never Smoker (a)	54	75.0	22.7	#
Never Smoker (b)	348	77.8	19.4	2.8*

* Moderate sampling variability; interpret with caution
# Data suppressed due to high sampling variability
(a) Never Smoker who has Seriously Thought About Smoking
(b) Never Smoker who has Never Seriously Thought About Smoking

Table 5-7b
Number of Smokers Inside the Home, by Grade, Sex, and Category of Smoker, Canada, Youth Smoking Survey 1994

	Pop. Est. ('000)	Number of Smokers in the Home (%)		
		None	1-2	3 or more
Total, Grades 5-9	**1,906**	**51.2**	**41.7**	**7.1**
Daily Smoker	84	19.6*	46.2	34.2
Smoked Beyond Puffing, Not Daily Smoker	420	35.1	53.0	11.9
Puffer	267	44.9	48.9	6.2*
Never Smoker (a)	172	59.4	34.3	6.3*
Never Smoker (b)	963	61.3	35.7	3.0
Grades 5-6	**725**	52.3	40.8	6.9
Daily Smoker	4	#	#	#
Smoked Beyond Puffing, Not Daily Smoker	63	19.6*	59.6	20.8*
Puffer	87	38.7	49.8	11.5*
Never Smoker (a)	66	51.0	38.9	10.1*
Never Smoker (b)	505	59.2	37.2	3.6*
Grades 7-9	**1,181**	50.5	42.2	7.3
Daily Smoker	81	19.8*	46.8	33.3
Smoked Beyond Puffing, Not Daily Smoker	357	37.9	51.8	10.3
Puffer	180	47.8	48.4	3.8*
Never Smoker (a)	106	64.6	31.5	#
Never Smoker (b)	457	63.6	34.0	2.4*
Males, Grades 5-9	**967**	**52.5**	**40.1**	**7.4**
Daily Smoker	39	21.4*	41.2	37.4*
Smoked Beyond Puffing, Not Daily Smoker	212	36.0	51.4	12.6
Puffer	144	47.7	46.3	6.0*
Never Smoker (a)	82	60.9	33.3	#
Never Smoker (b)	490	62.2	34.5	3.3*
Grades 5-6	**374**	52.6	41.0	6.4
Daily Smoker	2	#	#	#
Smoked Beyond Puffing, Not Daily Smoker	39	17.4*	61.6	21.0*
Puffer	49	36.2	53.4	#
Never Smoker (a)	32	52.5	42.4*	#
Never Smoker (b)	252	61.6	35.1	3.3*
Grades 7-9	**593**	52.5	39.6	7.9
Daily Smoker	37	21.4*	40.7	37.9*
Smoked Beyond Puffing, Not Daily Smoker	173	40.2	49.0	10.8*
Puffer	95	53.5	42.7	#
Never Smoker (a)	50	66.4	27.4*	#
Never Smoker (b)	238	62.9	33.8	3.3*
Females, Grade 5-9	**939**	**49.8**	**43.3**	**6.9**
Daily Smoker	45	18.0*	50.6	31.4*
Smoked Beyond Puffing, Not Daily Smoker	208	34.2	54.6	11.2
Puffer	123	41.6	51.8	6.6*
Never Smoker (a)	90	58.1	35.3	6.6*

Never Smoker (b)	473	60.3	36.9	2.8*
Grades 5-6	**351**	51.9	40.6	7.5
Daily Smoker	2	#	#	#
Smoked Beyond Puffing, Not Daily Smoker	24	23.0*	56.5	20.5*
Puffer	38	41.9	45.2	#
Never Smoker (a)	33	49.5	35.5*	#
Never Smoker (b)	254	56.8	39.3	3.9*
Grades 7-9	**588**	48.5	44.9	6.6
Daily Smoker	44	18.5*	52.1	29.4
Smoked Beyond Puffing, Not Daily Smoker	183	35.7	54.4	9.9*
Puffer	85	41.4	54.8	#
Never Smoker (a)	57	63.1	35.1	#
Never Smoker (b)	219	64.3	34.2	#

# Data suppressed due to high sampling variability
(a) Never Smoker who has Seriously Thought About Smoking
(b) Never Smoker who has Never Seriously Thought About Smoking

CHAPTER 6 - INFLUENCE OF HEALTH PRACTITIONERS

Judy Snider, MSc
Tobacco Control Programme
Health Canada

Joan M. Brewster, PhD
Ontario Tobacco Research Unit
Department of Public Health Sciences, University of Toronto

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HIGHLIGHTS

- Overall, less than one in five young people reported being asked by a health professional (doctor or dentist) about their use of tobacco products, and less than one in four students reported being advised by these professionals about the health risks of smoking. Young people reported that doctors were much more likely than dentists to both ask them about their use of tobacco products (17% vs. 5%) and talk to them about the health risks (21% vs. 10%).
- Whether or not the youth had a regular family practitioner (doctor or dentist) was not related to the reports of doctors' or dentists' practices of asking about tobacco product use and advising about health risks.
- As youth matured through grades 5-9, the reported prevalence of health professionals asking about tobacco product use increased, but the reported prevalence of them talking to students about health effects decreased.
- The reported prevalence of doctors asking young people about tobacco product use and talking to them about health effects of tobacco was related to respondents' level of smoking: those who had smoked in the last 30 days were most likely to report physician advice, followed by those who smoked beyond puffing.
- Ninety-six percent of students who had smoked within the last thirty days reported that they did not ask a doctor for help to quit smoking.
- Both doctors and dentists need to be encouraged to speak to youth in grades 5-9 about possible tobacco product use, and where necessary, youth-centered tools may need to be developed and disseminated to further assist them in these areas.

METHODS

Data from the 2002 Youth Smoking Survey (YSS) were analyzed to examine the role health professionals (doctors and dentists) may play with respect to adolescent smoking behaviours. Variables examined include family situation, demographics and thinking about quitting. Descriptive analyses were undertaken to provide information about students' reported experience with health practitioners' asking about the use of tobacco products and advising about the health effects from using tobacco products and the association of these practices with variables of interest.

Definitions

This section covers definitions and sample issues specific to this chapter. For detailed methods on the entire 2002 Youth Smoking Survey refer to Chapter 2. Specifically, the definitions used to categorize the different smokers have been described earlier (Chapter 2, especially Table 2-C and Chapter 3). The smoking behaviour analyses in this chapter were carried out using the three point derived variable (Never Smoker, Puffer and Smoked Beyond Puffing).

Access to health professionals (doctors and dentists) may play a role in whether youth take up or quit smoking. Health professionals have an opportunity to ask youth about their tobacco use behaviours (Y_Q60 and Y_Q63) and to inform them of the health risks associated with tobacco product use (Y_Q61 and Y_Q64). Having a regular family doctor (P_Q9A) or dentist (P_Q9B) was also assessed, as an established relationship between health practitioners and youth could facilitate frank discussions. Youth who smoke may ask doctors for help to quit smoking (Y_Q62). Students thinking about quitting (Y_Q32) may also trigger discussions about tobacco use with doctors.

Family situations may also play a part in health practitioners' practice with respect to smoking and youth. Analyses of these associations included examining derived variables from the Parent's Questionnaire including 'any parent smoked' which was based on the smoking habits of the father (P_Q9a) and the mother (P_Q9b). The derived variable 'grouped household income' (GPP_17) was used as a proxy for socio-demographic factors, which could also influence health professionals' behaviours.

The students' demographic variables used in these analyses included sex (Y_Q02), grade in school (GRADE), and aboriginal status (DVABORIG).

Sample & Response

Students were instructed to answer all the questions. In the processing of the data file, Statistics Canada applied business rules which in turn limited the coverage for some variables. Coverage for the variables asking doctors for help to quit smoking (Y_Q62) and thinking about quitting (Y_Q32) was limited to respondents who reported having smoked in the last 30 days. The questions on family situation were asked of all parents.

In general, missing data for items discussed accounted for less than 10% of the total responses. Notable exceptions include the derived variables for household income (11%) and any parent smoked (14%). The data presented are based on those for whom complete information was available.

The questions on health professionals in the 2002 YSS are new items. Thus, comparisons with the 1994 YSS are not possible.

Statistical testing for differences and the data quality level testing according to the guidelines set by Statistics Canada were undertaken for the findings presented are described in Chapter 2. In the text and tables, findings that have moderate variability where numbers should be interpreted with caution are marked with a star (*).

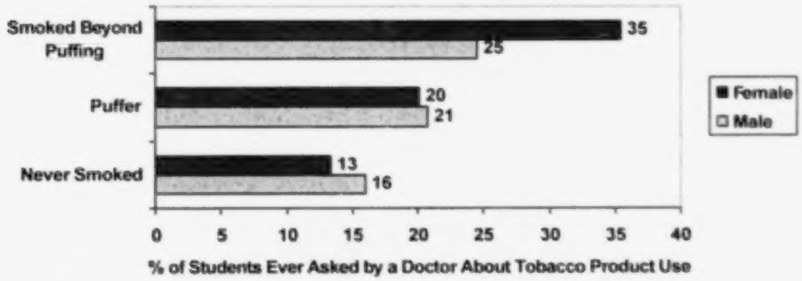
FINDINGS

Overall, parents reported that the vast majority of students had a regular family doctor (89%) and a regular family dentist (93%).

Doctor Asked About Smoking Cigarettes or the Use of Smokeless Tobacco

When asked whether a doctor had ever asked whether they smoke or use smokeless tobacco products, 17% of students responded positively (Table 6-1). Of these, 66% were never smokers, 20% puffers and 21% smoked beyond puffing. No difference in reports was found between males (17%) and females (17%). The data were analyzed by smoking category and a greater percentage of female students who smoked beyond puffing reported that their doctor asked about tobacco product use than males who smoked beyond puffing (35% vs. 25%) (Figure 6-A).

Figure 6-A
Doctor Ever Asked About Tobacco Product Use by Sex and Smoking Category, Grades 5-9, Canada, Youth Smoking Survey 2002



Only one-third (35%) of students who had smoked in the last 30 days reported that a doctor had ever asked them about the use of tobacco products. Among this group of students, those who had ever thought about quitting were equally likely to report being asked by a doctor (39%) than were those who had not ever thought of quitting (28%*).

As students matured through the grades, the reported prevalence of doctors ever asking about tobacco product use grew from 12% in grade 5 to 26% in grade 9. This was further examined by sex where differences were noted (Table 6-1). Males in grades 5 and 7 were more likely to be asked than females (15% vs. 8% and 17% vs. 12%). By grade 9 the situation was reversed, with 30% of females and 22% of males reporting having been asked about tobacco product use.

Being asked by a doctor about tobacco use also varied by province with students in British Columbia reporting the lowest rate (14%) while students in Quebec reported the highest rate (21%) (Table 6-2). These two provinces held the same ranking for the prevalence of students reporting that they had 'ever tried smoking a cigarette' (British Columbia 16% vs. Quebec 37%) (Chapter 3, Figure 3-F). An examination of physician intervention by smoking category among youth in the provinces revealed a different pattern. Of those students who reported smoking beyond puffing, 40% in New Brunswick stated that a doctor asked them about tobacco product use followed by students in Quebec (35%) and Saskatchewan (33%).

Having a regular doctor was not related to doctors' asking students about their use of tobacco products (17% for youth both with and without a regular doctor). An inverse relationship was noted with regard to household income: the frequency of doctors' asking youth about tobacco product use decreased as income increased, from 19% among households with less than $30,000 to 15% among households reporting $80,000 or more per year.

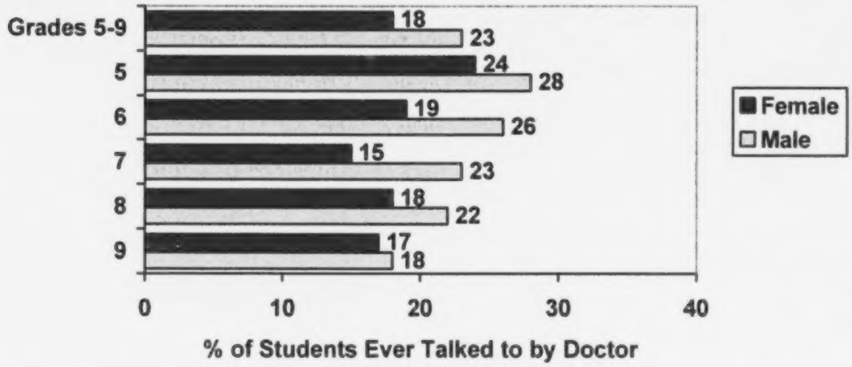
Students of aboriginal origin were no more likely than others to report being asked by a doctor about the use of tobacco products (20% vs. 17% for non-aboriginal origin). Students with at least one parent who smokes were slightly more likely to report being asked (19% vs. 16% for those with no parent who smokes).

Doctor Talked About Health Risks from Smoking Cigarettes or Using Smokeless Tobacco

Twenty-one percent of students reported that a doctor had ever talked to them about the health risks from using tobacco products (Table 6-1). Of these, 75% were never smokers, 10% puffers and 15% smoked beyond puffing. No difference in reports of ever talking was found between females (18%) and males (23%).

An opposite pattern was found when comparing the prevalence of doctors asking about tobacco use to the prevalence of doctors talking about health risks. While the former increased with grade, the percentage of youth who reported that their doctor had talked to them decreased across the school grades with 26% in grade 5 and 17% in grade 9 (Table 6-1). This pattern was noted in both sexes. Also, by grade 9 no difference was seen between the sexes (males 18%, females 17%), however, for the most part more males than females reported being talked to in the younger grades (Figure 6-B).

Figure 6-B
Doctor Ever Talked About Health Risks from Tobacco Product Use by Sex and Grade, Canada, Youth Smoking Survey 2002



When analyzed by sex and grade, regardless of the category of smoking behaviour, slightly more males than females reported that their doctor talked to them about the health risks (Table 6-3).

Less than one third (29%) of students who smoked in the last 30 days reported that a doctor had ever talked to them about the health risks of tobacco product use. This rate was no different than that reported by those who smoked beyond puffing. Among this group of students, there was no difference between those who had ever thought about quitting (33%) and those who had not ever thought of quitting (26%*) in whether a doctor had talked to them about health risks.

There was a cluster of provinces (British Columbia, Quebec and Prince Edward Island) where 22% of students reported being talked to about the health risks from tobacco product use (Table 6-2). This type of cluster was not seen among the provinces with regard to reports about being asked about tobacco use. When this was further examined by smoking category, no differences were seen among the provinces (Table 6-4).

Youth with and without a regular doctor were similar in their reports of being talked to about the health risks from using tobacco products (21% and 18%, respectively). When examined by quintiles of household income, no differences in reports of being talked to were found; reports ranged from 20% to 22%.

Students of aboriginal origin were no more likely than others to report that a doctor had talked to them about the health risks from tobacco product use (25% vs. 21% for students of non-aboriginal origin). Students with at least one parent who smokes were slightly more likely to report being talked to about health risks (23% vs. 20% for those with no parent who smokes).

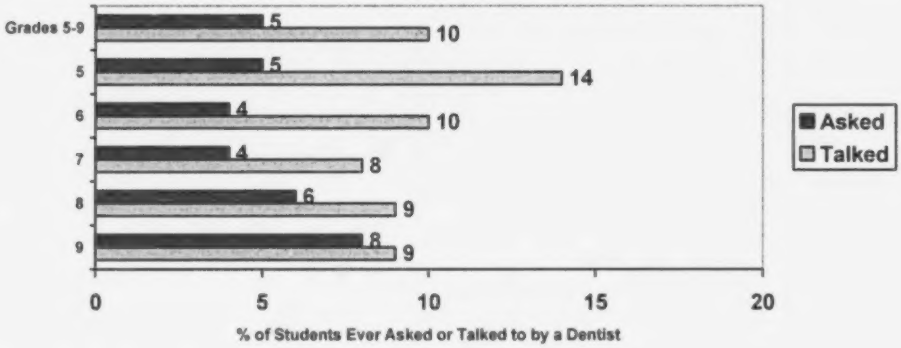
Students Ever Asked a Doctor for Help to Quit Smoking

Asking a doctor for help to quit smoking was rare among the students who had smoked within the last 30 days. The vast majority (96%) of students who responded to this question reported they had never asked a doctor for help to quit smoking. There was no difference between the grades, sexes, provinces or parental smoking.

Dentist Asked About Smoking Cigarettes or the Use of Smokeless Tobacco

Even though more parents reported that their children had a regular family dentist (93%) than a regular family doctor (89%), fewer youth reported having a dentist ask about their use of tobacco products or talk to them about the health risks from tobacco product use. When examined by grade, dentists appeared to be more likely to have talked to students in grades 5-8 about the health risks of tobacco use than to have asked about tobacco product use (Figure 6-C).

Figure 6-C
Dentist Ever 'Asked About Tobacco Product Use' or 'Talked About Health Risks from' Tobacco Product Use by Grade, Grades 5-9, Canada, Youth Smoking Survey 2002



Overall, 5% of respondents were asked by a dentist about tobacco product use. Smoking behaviour was related to being asked about tobacco product use. Only 4% of never smokers were asked, while 6% of puffers and 12% of those who smoked beyond puffing were asked. No differences were seen between the sexes.

Reports of being asked about tobacco use by dentists ranged from 4% in British Columbia, Alberta*, Ontario and Nova Scotia to 8% in Quebec (Table 6-5).

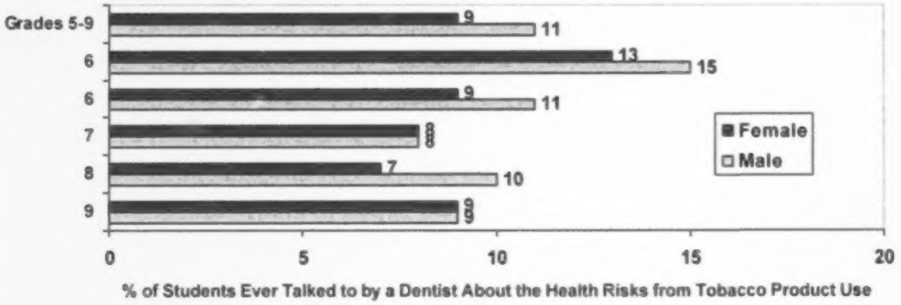
Having a regular family dentist was not related to the percent of youth who reported being asked by a dentist about tobacco use (5%), regardless of their smoking category. When examined by household income, reports of a dentist asking about tobacco use decreased from 7% among families with less than $30,000 to 4% among families reporting $80,000 or more. Students of aboriginal origin were more likely than others to report being asked by a dentist about their use of tobacco products (9%* vs. 5% for students of non-aboriginal origin). There was no difference in being asked by a dentist about tobacco use between students with at least one parent who smokes and those with no parent who smokes.

Dentist Talked About Health Risks from Smoking Cigarettes or Using Smokeless Tobacco

Overall, 10% of youth reported that a dentist ever talked to them about the health risks from tobacco product use. No difference was detected by smoking category: 10% of never smokers were talked to; 9% of puffers and 11% of those who smoked beyond puffing.

No difference was detected between the sexes (11% males vs. 9% females). The percentage of youth who reported that a dentist talked to them about the health risks from tobacco product use decreased across grades: 14% in students in Grade 5 reported being talked to compared to 9% of students in Grade 9 (Figure 6-C). This pattern was, for the most part, seen in both sexes (Figure 6-D).

Figure 6-D
Dentist Ever Talked About Health Risks from Tobacco Product Use by Sex and Grade, Grades 5-9, Canada, Youth Smoking Survey 2002



Youth living in New Brunswick, Newfoundland and Labrador, Prince Edward Island and Ontario reported the highest rate (11%) of having been talked to by dentists about the health risks from tobacco product use. The lowest rates were reported in Manitoba and Alberta (8%) (Table 6-5).

Youth with and without a regular family dentist were similar in their reports of being talked to by a dentist about the health risks from using tobacco products (10% and. 8%*, respectively). Household income showed some fluctuations (9% to 12%), with respondents from the lowest two quintiles (less than $45,000) reporting the highest proportion of being talked to by dentists about health risks (12%).

Students of aboriginal origin were no more likely than others to report that a dentist had talked to them about the health risks from tobacco product use (12% vs. 10% for youth of non-aboriginal origin). Students with at least one parent who smokes were slightly more likely to report that a dentist had talked to them (11%) than those (9%) with no parent who smokes.

DISCUSSION

In the 2002 YSS, only a minority of students reported having had a health practitioner either ask them about tobacco product use (less than one in five) or talk to them about the health risks from tobacco product use (less than one in four). The paucity of these reports may reflect a tendency among students to under-report these contacts, but this would not fully account for the very low prevalence. Activities need to be undertaken to encourage doctors and dentists to approach students regarding their smoking behaviours and advise them about the health risks associated with tobacco product use.

The vast majority of students in Canada have a regular family doctor and a regular family dentist, suggesting that there is opportunity for widespread interaction with youth. Those who have a regular family doctor or dentist were no more likely to report being asked about smoking, or advised about health risks, than were those who do not have a family practitioner. The proportion of students reporting that physicians had asked them about use of tobacco products or talked with them about health risks is consistent with reports in the literature,[1-3] although some published studies of "adolescents" have included older samples. Published reports suggest that physician discussion of tobacco with youth increases with age,[3] consistent with the 2002 YSS findings.

Doctors were much more likely than dentists to both ask young people about their use of tobacco products (17% vs. 5%) and talk to them about the health risks (21% vs. 10%). This difference is consistent with previous findings regarding physician and dentist advice to young patients who smoke.[4,5]. Physicians are more likely to discuss smoking with patients, and to help them quit, than are dentists. According to the 2002 YSS findings, dentists were twice as likely to talk about the health risks from tobacco product use (10%) than to ask young people about its use (5%). The disparities in asking and talking were less extreme among doctors (21% and 17% respectively), but the difference was in the same direction. Dentists may be less comfortable in approaching patients directly about their own smoking than in discussing health risks in general. Barriers to tobacco-related counselling among physicians and dentists include perceived lack of interest in quitting by patients, the need for further training, lack of time, and low priority of tobacco-related issues.[6,7] There are few studies specific to adolescents, but physicians report that they are reluctant to discuss smoking when parents are present as young patients may not respond truthfully.[8]

Doctors living in provinces with higher smoking rates were more likely to ask youth about their use of tobacco products. This suggests that doctors may be more aware of the issue in these provinces. More specifically, British Columbia, the province with the lowest rate for youth ever trying cigarettes (16%), also has the lowest rate of doctors asking youth about their tobacco product use while Quebec, the province with the highest rate for youth ever trying cigarettes (37%), has the highest rate of doctors asking youth about their tobacco product use. Doctors may be more aware of the issue in provinces with higher smoking rates. However, these provincial smoking rates did not appear to influence the rate of doctors talking about the health risks from tobacco use. In dentists, there did not appear to be any relationship between provincial smoking rates and either asking about use of tobacco products or advising about health risks from tobacco product use. Students' reports of being asked by a doctor about their use of tobacco products and being talked to by a doctor about the health risks of tobacco product use were related to smoking category, with those who smoked beyond puffing being most likely to have been asked or talked to. Among those who smoked within the last 30 days, those who had ever thought about quitting were most likely to have been advised by a physician. Taken together, these results suggest that doctors are more likely to advise young smokers than never smokers about the use of tobacco products. In addition, knowledge of parents' smoking status may increase health practitioners' intervention by increasing awareness of family smoking. However, previous studies have found that pediatricians are less likely to advise parents about smoking than to advise young patients about smoking.[9]. There is currently little evidence regarding the effectiveness of brief advice from doctors in helping young people to quit smoking, but brief interventions by doctors and dentists are effective in helping adult smokers to quit.[10]

Doctors and dentists were also more likely to ask youth from lower socioeconomic groups about their smoking than to ask those from higher income groups. This may be due to the health practitioners' perception that there are more smokers from lower socio-economic groups (e.g., lower education and income) than among people from higher lower socio-economic groups, or, in view of the finding that health practitioners are more likely to advise those who smoke beyond puffing, it could be related to a higher prevalence of smoking among students from lower socioeconomic groups (Chapter 3). Further investigation of these patterns requires multivariate analyses of the data.

Limitations

It is important to note that the YSS is a cross-sectional survey and the survey methodology precluded determination of the frequency, timing, and nature of the health professionals' intervention (asking/talking) with the students with respect to their smoking behaviour. Reliability of the self-reported discussions with health practitioners may be influenced by recall or reporting bias. The analyses regarding youth asking a doctor for help to quit is quite restricted due to the low prevalence of this behaviour and the limitation that the data for this variable included only students who reported smoking within the last 30 days. Finally, the absence of these health practitioner variables in the 1994 YSS precludes discussion of changes over time.

Implications for Education and Message Promotion

Youth report receiving information on the health effects of tobacco product use as part of the school curriculum, but this may not happen until they are in their teens (Chapter 8), by which time they may have started experimenting with tobacco products. Health practitioners have the opportunity to start the dialogue on smoking on a 'one on one' basis at an early age, but they do not appear to be taking advantage of this opportunity. This kind of patient contact could further support existing school-based initiatives to prevent the uptake of smoking and support cessation programs available to students.

Brief interventions by doctors and dentists are effective in helping adult smokers to quit, but the effectiveness of interventions with youth has yet to be identified, mainly due to lack of youth-specific research.[10,11] The medical and dental professions in Canada[12] and the Canadian Pediatric Society[13] have endorsed tobacco-related advice and smoking cessation intervention as important roles for practitioners. Both doctors and dentists should be encouraged to ask all youth, including those in the earlier grades, about tobacco product use and advise them about the health effects from such use. Continuing research is needed to develop and disseminate youth-centered tools to further assist health professionals in carrying out these practices. Through increased training and resources, the communication skills and confidence of health professionals may be improved to increase their comfort in helping youth to avoid tobacco product use.

As well, youth smokers should be encouraged to seek the assistance of health practitioners to help them to quit. Messaging that informs and educational programs that open the doors of communication with health professionals need to be developed for inclusion in youth smoking cessation programs. Given the opportunities that health professionals have when treating families, and the relationship between parental smoking and the uptake of smoking by their children, multi-pronged approaches and messages that target both young people and their parents should be developed to support quit attempts in both adults and youth who smoke, and to prevent initiation by youth who do not smoke.

Implications for Future Monitoring and Further Research

Surveillance cannot provide adequate information on the sequence, timing, nature and success of health practitioner interventions with youth, or the relationships between these interventions and young people's experimentation with and uptake of tobacco product use or their attempts to quit smoking. A longitudinal research protocol that measures these activities over time would be invaluable in assessing the potential impact of health professional interventions on youth smoking behaviour.

Given the unknown impact of youth-specific smoking cessation tools for doctors and dentists, an evaluation program should be in place prior to dissemination of these packages. Without information on the effectiveness of these interventions, it will be difficult to secure funds to support the development of new strategies and technologies to assist health practitioners in their practices. An evaluation strategy should also be considered to measure the success of a multi-pronged approach for health professionals to assist parents who smoke with quitting while preventing youth from taking up smoking.

In addition to education and skill-building, practitioner behaviour is related to the practice environment and patient characteristics.[9,10] The 2002 YSS findings indicate that there is a relationship between practitioner interventions and youth and parent smoking behaviour and family socioeconomic status. Further research is needed to explore patient factors that cue health practitioners for preventive and early interventions with youth and professional and environmental factors that encourage and support such interventions.

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Table 6-1
'Doctor Ever Asked About' or 'Doctor Ever Talked About Health Risks from Tobacco Product Use' by Sex and Grade, Canada, Youth Smoking Survey 2002

Grade	Pop. Est (000)	%Ever Asked		%Ever Talked	
		Yes	No	Yes	No
Total, 5-9	**1,995**	**17**	**83**	**21**	**79**
5	386	12	88	26	74
6	396	12	88	23	77
7	418	15	85	19	81
8	403	22	78	20	80
9	393	26	74	17	83
Males, 5-9	**1,022**	**17**	**83**	**23**	**77**
5	195	15	85	28	72
6	203	13	87	26	74
7	216	17	83	23	77
8	206	21	79	22	78
9	201	22	78	18	82
Females, 5-9	**973**	**17**	**83**	**18**	**82**
5	190	8	92	24	76
6	193	12	88	19	81
7	202	12	88	15	85
8	196	22	78	18	82
9	192	30	70	17	83

Table 6-2
'Doctor Ever Asked About' or 'Doctor Ever Talked About Health Risks from Tobacco Product Use' by Province, Canada, Youth Smoking Survey 2002

		%Ever Asked		%Ever Talked	
	Pop. Est (000)	Yes	No	Yes	No
Canada	**1,995**	**17**	**83**	**21**	**79**
NL	33	16	84	21	79
PE	10	15	85	22	78
NS	61	16	84	19	81
NB	48	19	81	21	79
QC	475	21	79	22	78
ON	761	17	83	21	79
MB	75	16	84	18	82
SK	67	16	84	19	81
AB	218	15	85	19	81
BC	246	14	86	22	78

Table 6-3
'Doctor Ever Talked About Health Risks from Tobacco Product Use' by Sex, Smoking Category and Grade, Grades 5-9, Canada, Youth Smoking Survey 2002

		%Doctor Talked About Health Risks	
	Pop. Est (000)	Yes	No
Grades 5-9	**1,995**	**21**	**79**
Never Smoker	1,544	20	80
Puffer	206	20	80
Smoked Beyond Puffing	244	25	75
Males			
Grade 5	195	28	72
Never Smoker	179	28	72
Puffer	12	28*	72
Smoked Beyond Puffing	4	#	66
Grade 6	203	26	74
Never Smoker	180	26	74
Puffer	14	29*	71
Smoked Beyond Puffing	9	34*	66
Grade 7	216	23	77
Never Smoker	169	23	77
Puffer	25	19*	81
Smoked Beyond Puffing	22	24*	76
Grade 8	206	22	78
Never Smoker	147	22	78
Puffer	28	18*	82
Smoked Beyond Puffing	32	28	72
Grade 9	201	18	82
Never Smoker	116	14	86
Puffer	34	22*	78
Smoked Beyond Puffing	51	23	77
Females			
Grade 5	190	24	76
Never Smoker	180	24	76
Puffer	7	#	83
Smoked Beyond Puffing	2	#	#
Grade 6	193	19	81
Never Smoker	173	19	81
Puffer	10	#	75
Smoked Beyond Puffing	9	#	73
Grade 7	202	15	85
Never Smoker	162	14	86
Puffer	19	#	84
Smoked Beyond Puffing	22	20*	80
Grade 8	196	18	82
Never Smoker	126	16	84
Puffer	27	15*	85
Smoked Beyond Puffing	44	25	75
Grade 9	192	17	83
Never Smoker	112	12	88
Puffer	30	20*	80
Smoked Beyond Puffing	50	25	75

* Moderate variability; interpret with caution
# suppressed due to high sampling variability

Table 6-4
'Doctor Ever Talked About Health Risks from Tobacco Product Use' by Province and Smoking Category, Canada, Youth Smoking Survey 2002

		%Doctor Talked About Health Risks	
	Pop. Est (000)	Yes	No
Canada	**1,995**		
Never Smoker	1,544	20	80
Puffer	206	20	80
Smoked Beyond Puffing	244	25	75
NL			
Never Smoker	24	19	81
Puffer	4	27	73
Smoked Beyond Puffing	5	22	78
PE			
Never Smoker	8	22	78
Puffer	0.7	#	76
Smoked Beyond Puffing	1	#	78
NS			
Never Smoker	46	19	81
Puffer	6	20*	80
Smoked Beyond Puffing	9	19*	81
NB			
Never Smoker	37	18	82
Puffer	5	23*	77
Smoked Beyond Puffing	6	34	66
QC			
Never Smoker	300	21	79
Puffer	66	21	79
Smoked Beyond Puffing	110	26	74
ON			
Never Smoker	636	21	79
Puffer	65	21*	79
Smoked Beyond Puffing	59	23*	77
MB			
Never Smoker	60	17	83
Puffer	8	#	82
Smoked Beyond Puffing	8	28*	72
SK			
Never Smoker	50	19	81
Puffer	9	17*	83
Smoked Beyond Puffing	8	20*	80
AB			
Never Smoker	176	19	81
Puffer	23	#	89
Smoked Beyond Puffing	20	27*	73
BC			
Never Smoker	207	21	79
Puffer	19	25*	75
Smoked Beyond Puffing	19	30	70

* Moderate variability; interpret with caution
# suppressed due to high sampling variability

Table 6-5
'Dentist % Ever Asked About' or 'Dentist % Ever Talked About Health Risks from Tobacco Product Use' by Province, Canada, Youth Smoking Survey 2002

		%Ever Asked		%Ever Talked	
	Pop. Est (000)	Yes	No	Yes	No
Canada	**1,995**	**5**	**95**	**10**	**90**
NL	33	6	94	11	89
PE	10	5*	95	11	89
NS	61	4	96	9	91
NB	48	6	94	11	89
QC	476	8	92	10	90
ON	760	4	96	11	89
MB	75	5*	95	8	92
SK	67	5	95	9	91
AB	218	4*	96	8	92
BC	246	4	96	9	91

* Moderate variability; interpret with caution

CHAPTER 7 - BELIEFS AND ATTITUDES

Michael Chaiton, MSc
Department of Public Health Sciences
University of Toronto

Joanna Cohen, PhD
Ontario Tobacco Research Unit, &
Department of Public Health Sciences
University of Toronto

Murray J. Kaiserman, PhD
Tobacco Control Programme
Health Canada

Scott T. Leatherdale, PhD
Division of Preventive Oncology
Cancer Care Ontario,
Department of Health Studies and Gerontology
University of Waterloo, &
Department of Public Health Sciences
University of Toronto

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HIGHLIGHTS

- Most students in grades 5-9 believed smoking is addictive (88%), and that secondhand smoke is harmful to non-smokers (86%), and these beliefs increased with grade. Only a minority of students in grades 5-9 (37%) believed that quitting smoking will reduce damage even after years of smoking. Students in grades 5-9 in Quebec (57%) were much less likely than students in other provinces (69%) to believe that occasional smoking causes harm.
- Students in higher grades 7-9, especially those who have smoked beyond puffing, were more likely to perceive benefits from smoking. The majority of students in grades 5-9 (74%) believed that it is nicer to date non-smokers, even among students who have tried smoking (59%). Very few students in grades 5-9 (3%) believed that smoking is cool; however, more than one quarter of students who have smoked beyond puffing in grades 5- 6 (32%) believed that smoking is cool. Students with friends who smoke were more likely to believe smoking is cool.
- Students in grades 5-9 reported that friends' smoking or peer pressure was the main reason for youth smoking (64%). Among students in grades 5-6, "popular kids smoke" was the second most endorsed reason (45%) while among students in grades 7-9, curiosity was the second most endorsed reason (56%). Never smokers were more likely to give reasons of status (it's cool, popular kids smoke) as reasons why youth smoke than students who smoked beyond puffing.
- The majority of students believed the health warning messages on cigarette packages and agreed that health warning messages should be on cigarette packages. However, the majority of students in grades 5-9 who smoked beyond puffing were somewhat less likely to endorse or believe the health warning messages compared to never smokers. Students in grades 5-9 who reported seeing the health warning messages often were more likely to agree with them.
- Students in grades 5-9 in the 2002 YSS were more likely to report that occasional smoking endangers health than were similar students in 1994 YSS, but students in the 2002 YSS were more likely to believe that smokers can quit anytime and smoking helps people relax. However, students in the 2002 YSS in grades 5-9 who smoked beyond puffing were more likely to believe that it is nicer to date non-smokers and less likely to report that it was cool to smoke than were students in the 1994 YSS.

METHODS

This section covers definitions and sample issues specific to this chapter. For detailed methods on the entire 2002 Youth Smoking Survey refer to Chapter 2.

Definitions

The 2002 Youth Smoking Survey (YSS) included numerous questions looking at the attitudes and beliefs of students in grades 5-9. This chapter presents data related to the health effects of smoking (Y_Q46A-H, J), attitudes toward smoking (Y_Q46I, Y_Q46K), reasons why students start smoking (Y_Q47), beliefs about health warning labels on cigarette packages (Y_Q52, Y_Q53), and questions quantifying the deadliness of tobacco (Y_Q80, Y_Q81). Questions on tobacco sponsorship, which were in the 1994 YSS, were not asked in the 2002 YSS. Closed-ended questions in which the student endorsed whether or not they believed the item to be true were used for many of the response categories. Unlike the 1994 YSS, where older students were administered the survey differently, there was no component in which answers were given unaided or unprompted. All responses were selected from a list provided. For question Y_Q52, in which students were asked how much they agreed with cigarette packages having health warning labels (agree a lot, agree a little, neither, disagree a little or disagree a lot) only "agree a lot" is reported in this chapter.

Beliefs and attitudes were examined according to type of smoker, grade (GRADE), sex (Y_Q2), and province (PROVINCE). The three-category definition of type of smoker was used in this chapter (Never Smoker, Puffer, Smoked Beyond Puffing). Refer to Chapter 2, especially Table 2-C, and Chapter 3 for definitions and a thorough discussion of these categories. Other correlates used in this chapter include the proportion of friends who smoke, the proportion of smokers in the household, self-rated academic performance relative to peers (Y_Q54), and language group (Y_Q3).

Sample and Response

Missing data for items discussed accounted for less than 10% of the total responses. As such, the data presented are based on those for whom complete data were available. According to Statistics Canada guidelines, data are not reportable if the sample size was too small or if there was high sampling variability. Statistically significant group differences were determined using procedures described in Chapter 2.

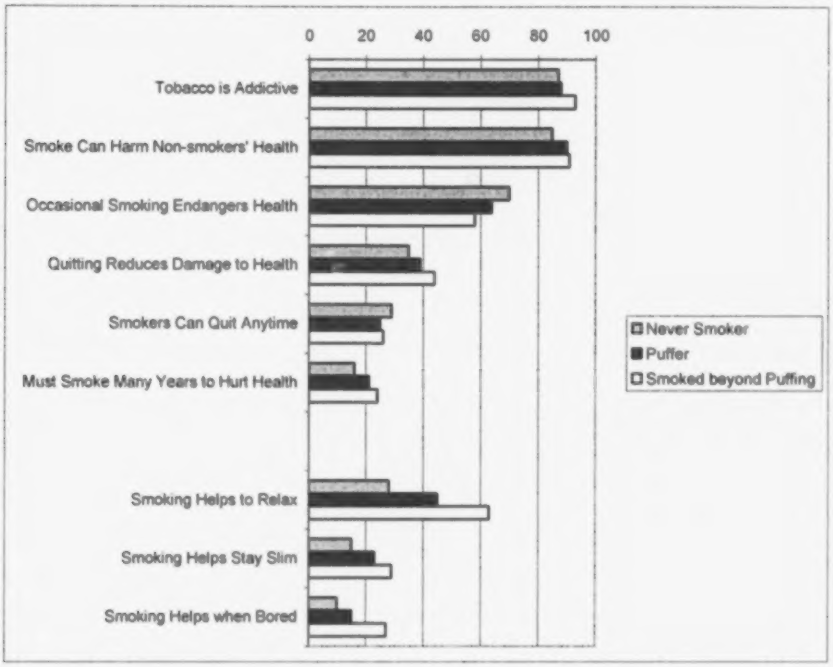
FINDINGS

Beliefs about Smoking and Health

The beliefs of students in the 2002 YSS about the harms of tobacco and about quitting are shown in Table 7-1a. Overall, the majority of all students in grades 5-9 believed that tobacco is addictive (88%), that environmental tobacco smoke (ETS) is harmful to non-smokers (86%), and that occasional smoking is harmful to health (67%). Just over one third of students believed that quitting smoking reduces damage even after years of smoking (37%). Twenty-nine percent believed smokers can quit any time. Less than one fifth (17%) believed that one must smoke for many years before health is harmed.

Students in grades 5-6 were more likely than students in grades 7-9 to believe that smokers can quit anytime (36% and 24%, respectively). Conversely, students in grades 7-9 were more likely than students in grades 5-6 to believe quitting smoking even after years reduces damage (40% and 31%, respectively), tobacco is addictive (91% and 83%, respectively), and ETS is harmful to non-smokers (91% and 78%, respectively).

Figure 7-A
Health Beliefs by Category of Smoker, Canada, Youth Smoking Survey 2002



In the 2002 YSS there was a strong association between smoking behaviour and beliefs about the harms of tobacco and the benefits of quitting (Figure 7-A). Students who have smoked beyond puffing were more likely than never smokers to believe tobacco is addictive (93% and 87%, respectively), ETS is harmful to non-smokers (91% and 85%, respectively), quitting smoking reduces damage even after years of smoking (43% and 35%, respectively), and you must smoke for many years before you hurt your health (24% and 16%, respectively). Conversely, students who have never smoked were more likely than students who have smoked beyond puffing to believe occasional smoking endangers health (70% and 56%, respectively).

Differences were found between males and females. Among students in grades 7-9, males who smoked beyond puffing were more likely than comparable females to believe that you must smoke for many years before you hurt your health (29% and 19%, respectively), or that quitting smoking reduces damage even after years (49% and 39%, respectively).

Overall, the awareness of the harms of tobacco was greater in the 2002 YSS than the 1994 YSS. The belief that occasional smoking endangers health increased from 62% in 1994 to 67% in 2002. (Tables 7-1a and 7-1b) In grades 7-9 only 59% of the 1994 cohort believed in dangers of occasional smoking, but 68% of the 2002 cohort in grades 7-9 endorsed this belief. However, substantially more students in 2002 thought that smokers can quit anytime (29% in 2002 vs. 17% in 1994). Furthermore, in 2002 fewer students believed that quitting smoking reduces damage even after years (37% vs. 47% in 1994).

The majority of students in the 2002 YSS did not perceive benefits from smoking (Table 7-2). The most commonly perceived benefit was that smoking helped people relax (36%). Some students also felt that smoking helped with weight control (18%), and helped people when they were bored (13%). Perceptions of cigarettes as a tool to help people relax, help people stay slim, and prevent boredom increased with grade. The belief that cigarettes help people relax more than doubled from grades 5-6 (24%) to grades 7-9 (49%). In the higher grades, more students believed that smoking helps people stay slim (12% in grade 5-6 compared to 21% in grades 7-9).

There were no significant sex differences in beliefs about the perceived benefits of smoking.

In the 2002 YSS a majority of those who have smoked beyond puffing (62%) believed smoking helps people relax compared to puffers (45%) and never smokers (30%). Students who have smoked beyond puffing were also more likely than never smokers to believe smoking helps people stay slim (29% and 15%, respectively), and smoking helps people when they are bored (27% and 10%, respectively) (Table 7-2a).

From the 1994 to the 2002 YSS, there were changes in belief that smoking helps people relax, but no significant difference in beliefs that smoking makes you slim or helps when bored. Youth in all smoking categories surveyed in 2002 were more likely than students in 1994 to endorse the belief that smoking helps people relax: never smokers (2002: 30%; 1994: 21%), puffers (2002: 45%; 1994: 35%) and students who had smoked beyond puffing (2002: 62%; 1994: 53%) (Table 7-2a and Table 7-2b).

While many students were aware of the relative deadliness of smoking, they were not aware that the death toll from cigarettes is more than that for each of alcohol, suicides, accidents, murders, drugs, and AIDS (Table 7-3). A majority of students believed that the death toll due to smoking is higher than alcohol (60%) and suicide (53%). However, 63% of students thought AIDS is responsible for more deaths than tobacco. Younger students (in grades 5-6) were more likely than older students (in grades 7-9) to underestimate the relative harm of tobacco for each cause of death except alcohol and accidents, for which reports of harm were similar in the two groups (Figure 7-B). Females were more likely than males to underestimate the relative number of deaths from tobacco compared to each of the other causes of deaths. For instance, 65% of males compared to 54% of females believed that cigarettes cause more deaths than alcohol. Students who have smoked beyond puffing were more likely than never smokers to believe smoking causes more deaths than each of suicides, murders, drugs and AIDS. Whereas 50% of students who have smoked beyond puffing believed there are more deaths due to smoking than due to drugs, only 38% of never smokers held this belief. It should be noted that even these findings underestimate students' failure to appreciate the relative deadliness of smoking. The survey questions asked students to compare the deadliness of smoking to each cause of death. But, in fact, smoking causes more deaths than all of these other causes combined.

Figure 7-B
Percentage of Students Who Believe that Smoking is Responsible for More Deaths than AIDS, Drugs, Murders, Accidents, Suicides, and Alcohol, Canada, Youth Smoking Survey 2002

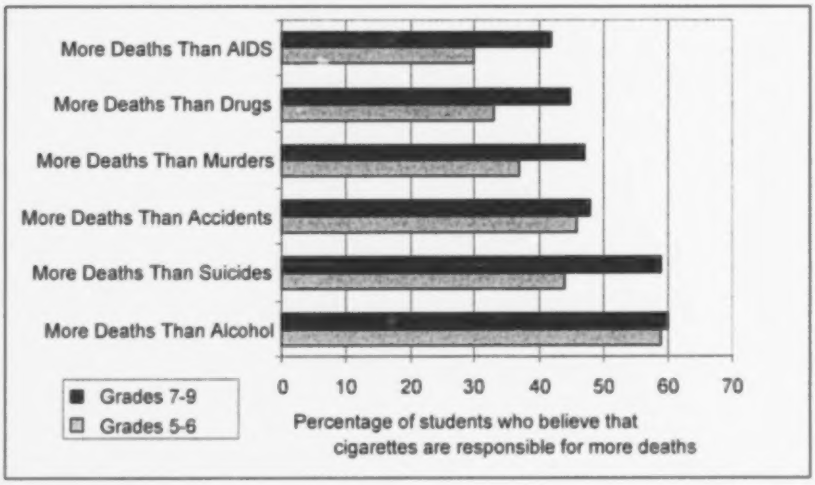
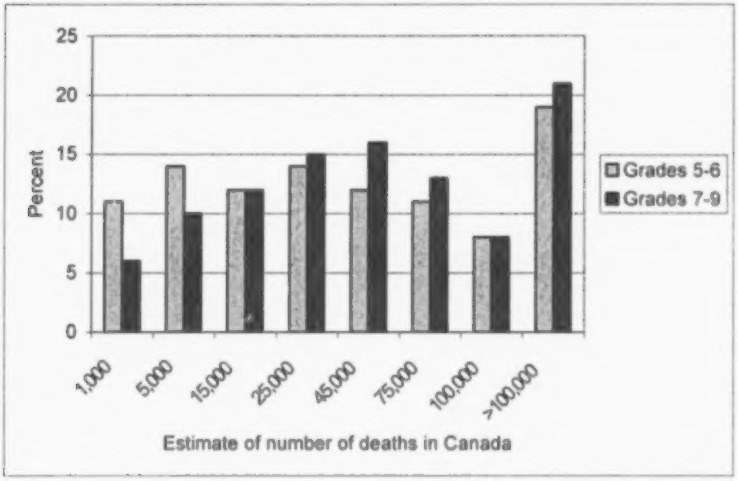


Figure 7-C
Estimates of Numbers of Deaths Due to Smoking by Grade, Canada, Youth Smoking Survey 2002



Fifteen percent of students were able to correctly estimate that 45,000 people die from smoking each year in Canada, while 46% underestimated and 40% overestimated the death toll (Figure 7-C). The most common response reported by students (20%) was that more than 100,000 die from smoking each year. Half of students in grades 5-6 (50%) underestimated the death numbers, compared to 43% in grades 7-9. Females were more likely to underestimate the numbers than males (50% and 41%, respectively). There was no significant difference by category of smoker in the estimates of the number of deaths due to smoking.

There was little provincial variation in perceptions of the benefits of smoking. However, compared to all students, students in Quebec were less likely to report that smoking is addictive, there is danger from an occasional cigarette, smokers can quit anytime, and smoking helps people relax and more likely to report that one must smoke for years to hurt health, and that smoking helps people stay slim (Table 7-4).

Anglophone students were more likely than Francophone students to believe tobacco is addictive (91% and 78%, respectively), there is danger from an occasional cigarette (70% and 57%, respectively), and smoking helps people relax (39% and 25%, respectively) (Table 7-5).

Students with self-perceived above average class standing were more likely to believe that occasional smoking endangers health, but otherwise class standing was not generally associated with belief in the harms of smoking (Table 7-5).

Students who reported all their close friends smoke were more likely to believe that smoking helps people relax than were students with no close friends who smoke (57% and 31%, respectively) (Table 7-5). Belief that smoking helps people relax was lowest (33%) among students who report that no one smokes in the household and highest among students who report that all people in the home smoke (50%). Similarly, students who reported that all their close friends smoke were more likely to report that smoking helps when bored compared to students with no close friends who smoke (28% and 11%, respectively). Also, students from households where all in the household smoke were more likely to believe that smoking helps when bored than were students from households where no one smokes (25% and 12%, respectively).

Attitudes toward Smoking

Three-quarters (74%) of respondents believed that it is nicer to date non-smokers than smokers (Table 7-6a). Even among those who have smoked beyond puffing, a majority (59%) believed it is nicer to date non-smokers. There were only minor variations by grade and sex, except that both male and female reports that it is nicer to date non-smokers were higher among students in later grades.

Table 7-A
Attitudes Toward Smoking, By Category of Smoker, Canada, Youth Smoking Survey 2002, 1994

	It's Nicer to Date Non-smokers (% Yes)	Smoking is Cool (% Yes)
2002		
Total	**74**	**3**
Never Smoker	76	1
Puffer	71	5
Smoked Beyond Puffing	59	11
1994		
Total	**69**	**6**
Never Smoker	77	2
Puffer	70	5
Smoked Beyond Puffing	48	16

A very small percentage of students (3%) believed smoking is cool (Table 7-6a). However, students who have tried cigarettes were more likely to report that smoking is cool (11% of those who have smoked beyond puffing compared to 5% of puffers and 1% of never smokers) (Table 7-A, 7-6a).

Students who responded to the 2002 YSS had more negative attitudes toward smoking than students in the 1994 YSS (Tables 7-6a and 7-6b). More students who smoked beyond puffing in 2002 believed it is nicer to date non-smokers compared to students who smoked beyond puffing in 1994 (59% and 48%, respectively). In 1994, 6% felt that it was cool to smoke compared to 3% in 2002. The reduction in the percentage who felt that smoking is cool reflects both the decreasing perception of coolness in those who have smoked beyond puffing and changes in the prevalence of smoking, as never smokers tend to believe that smoking is not cool.

Among students in the 2002 YSS the attitude that it is nicer to date non-smokers decreased as the proportion of friends who smoke increased, from 77% in students with no close friends who smoke to 41% in students who reported that all their close friends smoke (Table 7-B, 7-8). Support of the statement that smoking is cool increased directly with the percentage of close friends who smoke from 1% of students with no friends who smoke up to 14% of those with all friends who smoke. Similar trends in these attitudes were seen as the proportion of people who smoked in the student's household increased. Anglophone students were more likely than Francophone students to prefer dating non-smokers (76% and 62%, respectively) (Table 7-5).

Table 7-B
Attitudes Toward Smoking by Proportion of Friends Who Smoke and Proportion of Smokers in the Household, Canada, Youth Smoking Survey 2002

	It's Nicer to Date Non-smokers (% Yes)	Smoking is Cool (% Yes)
Proportion of Friends who Smoke	**74**	**3**
None	77	1
Less than Average	75	4
Average or Greater	60	8
All	41	14
Proportion of Smokers in the Household	**74**	**3**
None	77	2
Less than Average	69	4
Average or Greater	65	4
All	55	6

Perceived Reasons Youth Start Smoking

Most students (64%) thought that students start smoking because their friends smoke (Table 7-9a). Many students also endorsed "curiosity" (49%), "popular kids smoke" (46%) and "it's cool" (45%), as reasons for starting. Very few students believed youth start smoking because "it's relaxing" (12%).

The perception that youth start smoking because their friends smoke increased with grade: 58% of grade 5-6 students thought that youth start smoking because their friends smoke compared to 69% of grade 7-9 students. Similarly, the perception that smokers start out of curiosity was more prevalent among students in grades 7-9 than among those in grades 5-6 (56% and 39%, respectively. Fewer grade 5-6 students compared to older students in grades 7-9 thought that youth start smoking because siblings smoke (23% and 27%, respectively), it's something to do (12 and 16%, respectively), it's not allowed (9% and 17%, respectively), for weight control (11% and 14%, respectively), and it's relaxing (8% and 14%, respectively). There were no statistically significant differences by grade in perceptions that youth start because popular kids smoke, because it is cool, and because parents smoke.

Never smokers were more likely than students who smoked beyond puffing to agree that people their age start smoking because it is cool (46% and 35%, respectively) and because popular kids smoke (49% and 31%, respectively). However, 20% of those who have smoked beyond puffing thought people their age start smoking because it is relaxing compared to 10% of those who never smoked.

There were gender differences in perceptions about reasons why youth start to smoke. More than half (54%) of the female students thought people their age start smoking because popular kids smoke compared to about two-fifths (39%) of the male students. Females were more likely than males to think people their age started smoking out of curiosity (54% and 44%, respectively) and that youth start smoking because it is cool (49% and 41%, respectively). Seventeen percent of females thought that people their age start smoking to lose weight or stay slim while only 9% of males thought this was a reason for smoking.

Generally, the patterns of reasons why students start smoking were similar in the 2002 and 1994 YSS. Two patterns did exhibit significant differences. Students responding to the 1994 YSS, as compared to students in the 2002 YSS, were more likely to endorse "friend smoking" (74% vs. 64%) and "curiosity" (56% vs. 49%) as reasons for smoking (Table 7-9a and 7-9b).

Significantly more Anglophone than Francophone students thought that youth started smoking because popular kids do (49% and 38%, respectively (Table 7-10). However, fewer Anglophones (63%) than Francophones (71%) perceived that youth start smoking because friends smoke.

Fifty-one percent of students with self-perceived better than average school standing thought that people their age start smoking because popular kids smoke, compared to 45% of average standing and 35% of below average standing (Table 7-10). Students who perceived themselves to have above average standing were also more likely than students who perceived themselves below average standing to think that people their age start out of curiosity (55% vs. 44%) and because it is cool (49% vs. 38%).

The reasons why students thought youth their age start smoking also differed by the percentage of friends they have who smoke and smoking in the household. Only 30% of respondents who report all their close friends smoke thought "popular kids smoke" is a reason for smoking, compared to nearly half (49%) of those with no close friends who smoke. The reverse is true for perceiving relaxation is a reason for smoking. In this case, one in five (21%) students who report all their close friends smoke thought this is a reason for smoking compared to 9% of those with no close friends who smoke. Similar patterns for these two perceived reasons for smoking were found with regard to smoking by people in the household.

Beliefs about Cigarette Package Health Warning Messages

Nearly all students believed the health warning messages on cigarette packages and there was little variation by grade and sex. There was a significant difference by smoking status: 94% of never smokers believed the health warning messages compared to 84% of those who have smoked beyond puffing (Table 7-C). Having more close friends who smoke was also related to a lower percentage of those who believed the health warning messages. While 94% of those who have no close friends who smoke believed the health warning messages, just 84% of those who reported all their close friends smoke believed them. Similarly, as the percentage of people in the household who smoke increased, the percentage believing the health warning message decreased. There also appeared to be a difference by perceived academic performance relative to peers; 86% of those reporting a below average standing believed the health warning messages compared to 94% of students reporting above average standing.

Table 7-C
Beliefs About Cigarette Package Health Warning Messages by Type of Smoker, Canada, Youth Smoking Survey 2002, 1994

	Believe the Health Warning Message (%yes)	Agree A Lot with Having Health Warning Message on Cigarette Packages (%yes)
2002		
Never Smokers	94	87
Puffers	92	77
Smoked Beyond Puffing	84	61
1994		
Never Smokers	91	85
Puffers	94	80
Smoked Beyond Puffing	87	55

Since 1994 there have been no significant changes in the belief or agreement with the health warning messages (Table 7-C, Table 7-11).

It is encouraging to note that the percentage of students who believed the health warning messages on cigarette packages increased with the reported frequency of looking at the health warning messages (Table 7-12). This effect was most noticeable in those who have smoked beyond puffing where 79% of those who "never" look at the health warning message believed the message, but 93% of those who look at the health warning message at least once a day believed the message, a percentage which is comparable to that found among never smokers.

A majority of the students "agreed a lot" that cigarette packages should have health warning messages (Table 7-C). There were no major differences by grade or sex. However, strong agreement with having the health warning messages varied substantially with the category of smoker: 87% of never smokers agreed a lot with the health warning messages compared to 77% of puffers and 61% of those who have smoked beyond puffing (Table 7-C). Knowing other people who smoked was related to reduced support for having warning messages. While 84% of those who have no close friends who smoke agreed with having health warning messages, only 56% of those reporting that all close friends smoke strongly agreed with having them. Similarly, only 66% of students who live in households where all the members smoked agreed a lot with having health warning messages. Class standing was also associated with agreement with 83% of students describing themselves as above average standing supporting health warning messages compared to 67% of those with below average standing. A smaller number of students in Quebec (71%) agreed with having the health warning messages compared with students overall. This was in line with the percentages of Anglophone and Francophone students who agreed with having the health warning messages (83% and 70%, respectively).

DISCUSSION

Beliefs about Smoking and Health

The continued health campaigns against tobacco use appear to be effective in changing the beliefs of Canadian youth. A majority of Canadian students in grade 5-9 believed that tobacco is addictive, and, that while quitting smoking can be difficult, it will reduce damage to health. Students generally understood that occasional smoking can be dangerous, and that the harms from tobacco can come without smoking for many years. Beliefs about the harms of occasional smoking have increased significantly since the 1994 YSS.[1]

Although the dangers of smoking are generally understood, students underestimated the number of deaths caused by smoking compared to other causes. Nevertheless, unfortunately, many students do not have an accurate perception of the relative harm of smoking compared to alcohol, drugs, accidents, AIDS, suicides, and murder and fail to recognize that smoking is responsible for many more deaths than these causes. Many students may be exposing themselves to this hazard because of failure to recognize the magnitude of the risk.

The findings of the YSS 2002 indicated that students in the higher grades have more accurate perceptions of risk, as perhaps these students have been more exposed to information about the relative risks present in society. Also, they may have received more education in school on the topic of smoking. Findings from the 2002 Ontario Student Drug Use Survey also indicate that perception of the risk of tobacco use is more accurate among students in the higher grades. Among students in that survey, 25% of grade seven students believed that people, if they smoke one or more cigarettes a day, put themselves at great risk of harm, compared to 37% of grade 12 students.[2]

Although past research has shown that there is a tendency for student smokers to dismiss the negative effects of smoking,[3] this was not consistently found in the 2002 YSS. Students who had smoked beyond puffing were, in fact, more likely than never smokers to believe in the harms from cigarettes, such as the addictiveness of tobacco and the harmfulness of secondhand smoke. With respect to risk, these findings should be interpreted with caution. Studies on how individuals construct numerical estimates have found that such estimates are subject to considerable bias and error.[4]

On the other hand, students who smoked beyond puffing were less likely to believe in the dangers of occasional smoking. They were also more likely than never smokers to believe that smoking has positive effects (i.e., it's relaxing, helps when bored, and controls weight). Personal experience with or observation of people at home or school who smoke may have an effect on these beliefs. Beliefs in the positive effects of smoking appeared to increase with items associated with experience of smoking such as grade, number of friends who smoke, and number of smokers in the household.

It has been hypothesized that the perception of smoking as relaxing is a function of nicotine dependence and a symptom of withdrawal.[5] That is, smoking is perceived as relaxing because it alleviates the effects of withdrawal (irritability, restlessness, and weight gain) from nicotine itself. Findings from the 1994 YSS suggests that awareness of the ability of nicotine to affect these symptoms is reflective of physical dependence.[1] The strong endorsement of these beliefs in smokers who have had only a single puff on a cigarette or who are not yet daily smokers may suggest that physical dependence on cigarettes may require much less smoking experience than has been previously thought, consistent with recent research on teens in Quebec.[6] Because the YSS was a cross-sectional survey, however, it cannot show whether beliefs about the perceived benefits of smoking come prior to smoking or whether the perceived benefits are used to justify smoking behaviour.

Attitudes towards Smoking

A majority of students believed that it is nicer to date non-smokers. This position identified a common perception that smoking is not desirable; however, it is not known whether the youth are reacting to physical symptoms of smoking such as "smell" or the social aspects of smoking, that is, having a partner who is a smoker is less desirable from the point of view of social acceptability. From an intervention perspective, either attitude could potentially be an effective deterrent, but the meaning of these reports needs to be better understood before messages can be constructed.

Certainly, smoking was not regarded as "cool" by most students. Nearly all students deny the coolness of smoking, even 91% of those who have smoked beyond puffing. The exception was among grades 5-6 students who have smoked beyond puffing, where over a quarter reported believing that smoking is cool. The 1994 YSS findings suggested that the dissolution of the belief that smoking is cool is an effect of adaptation to smoking by older smokers who have passed the initiation and experimentation stage and smoke out of addiction.[1] However, in the 2002 YSS findings, the shift in attitudes toward smoking was noticeable by seventh grade, where few have smoked for substantial periods of time. This suggests that either adaptation is far quicker than previously hypothesized or that this finding is a function of another process.

Social environment clearly played a part in attitudes, particularly, in the percentage of friends who smoke. A greater percentage of youth whose close friends all smoked reported that smoking was cool, and more people felt it was nicer to date smokers than non-smokers compared to youth with no close friends who smoked. It was unclear from the 2002 YSS the direction of effect as to whether the influence of peers determined the attitude of smoking, or whether the groups were self-defining where like-minded youth associated with each other. The effect of smokers in the household also had an effect on the attitudes toward smoking, but this appeared to be less influential than that of friends.

Reasons Youth Start Smoking

Consistent with the 1994 YSS, students still reported that having friends who smoke, curiosity, and the coolness of smoking are the major reasons for starting smoking. Peer pressure of friends is the most commonly endorsed reason for starting. Students were more likely to report curiosity as a reason for starting smoking as grade and smoking increased.

Students who have smoked beyond puffing were less likely than never smokers to endorse "it's cool" and "popular kids smoke" as reasons that youth start smoking. They may be reluctant to attribute their smoking to the desire to be "cool." The 1994 YSS technical report suggests that this reluctance was also evident in the fact that fewer younger students who smoked beyond puffing endorsed "friends smoke" as a reason youth start; however, this effect was not clear in the 2002 data. The basis for why endorsement of both "friends smoking" and "curiosity" as reasons to start was higher in older students is unclear, but perhaps it has to do with increased experience in seeing other students start smoking in the peer group environment.

Students who smoked beyond puffing reported divergent reasons for starting smoking and beliefs about the experience of smoking. For instance, while a majority of students who have smoked beyond puffing believe that smoking helps people relax, only 20% gave this as a reason for starting. This divergence may arise as reasons for continuing smoking, particularly the onset of addiction, are different from the reason for their first experimentations, which may be largely driven by social reasons. It must be noted that while self-reports of reasons for starting smoking are valuable, these data have limitations. In particular, smokers may not be able to fully document or be conscious of their own reasons for starting.

Beliefs about Cigarette Package Health Warning Messages

New and innovative health warning messages for cigarette packages appeared in Canada in 2000, and evaluation of the impact of the health warning messages suggests it was still being felt in 2002. Support for and belief in the health warning messages was high among almost all Canadian students; although, fewer people who smoked beyond puffing believed the health warning messages compared to never smokers. Interestingly, the more the health warning messages were seen the more likely they were to be believed. This suggests that the health warning messages are having an effect on the attitudes of smokers, and may contribute to the higher beliefs in the harms of tobacco in some areas for puffers and those who have smoked beyond puffing compared to never smokers. This is consistent with previous research. For instance, in Wave 5 of the Health Canada evaluation of the health warning messages conducted in July 2002, 36% of young smokers (12 to 18 years old) were able to identify the smoking attributable mortality in Canada as 45,000 deaths a year, a figure which appears as one of the health warning messages, compared to the 27% of potential smokers.[7] The high level of belief or agreement with the health warning messages has been maintained since the dramatic changes in the health warning messages in December 2000 when graphic images and stronger text, both outside and inside the cigarette package, were added.

Implications for Regulation and Legislation

Since the 1994 YSS, tobacco company sponsorship has been eliminated and improved health warning messages have appeared on cigarette packages. Current tobacco control activities have integrated five major themes: prevention, cessation, protection, harm reduction, and tobacco industry denormalization (Chapter 1). In preventing youth from taking up smoking, Canada has integrated legislation, regulation, public education, program supports, and mass media activities. These include restricted access of youth to tobacco products; health warning messages on cigarette packages targeted specifically to youth; school-based initiatives; a Youth Action Committee and mass media campaigns. The cessation and protection (from second-hand smoke) themes are also made explicit through the integration of regulation, health warning messages and smoking bans; school-based initiatives; enforcement and mass media campaigns. Population-level interventions have been shown to be successful in changing beliefs concerning tobacco and smoking.[8-11]

Youth continued to trust messages from the government, as seen in their strong agreement with and belief in the cigarette package health warning messages, which are credited to Health Canada. It appears that the cigarette package is an effective site for transmitting messages to youth at risk of smoking or who are already smoking, as these youth have more exposure to the cigarette packages. Introducing new messages could help maintain the impact of these health warning messages. It is particularly important to address the increases in the beliefs about the positive effects of smoking such as the belief that cigarettes help people relax.

Curiosity and the influence of their peer group continued to be the most endorsed reasons why students believe youth start smoking. Efforts at reducing the availability and omnipresence of cigarettes might do much to reduce the interest in attempting to use cigarettes. Placing cigarettes out of sight in convenience stores, or restricting sale of tobacco industry products to a limited number of venues could decrease the pervasiveness of tobacco industry products.

Implications for Education and Message Promotion

When the first YSS was conducted in 1994, it encompassed the first generation of Canadian youth to be targeted with school-based health education and message promotion about the harmful effects of tobacco smoke. Since 1994, these health education messages have been evolving and have become more comprehensive in order to address another generation of Canadian youth. The 2002 YSS findings identify areas where education and message promotion appears to be working. Particularly, success appears to have been achieved in communicating the harms of tobacco use and reducing the number of students who think smoking is cool. Although potentially due to shifts in the cultural milieu, it appears that the message that smoking is not a socially normative or acceptable behaviour is permeating into youth culture. The 2002 YSS findings also identify areas where education and message promotion about smoking is not as effective. Substantial numbers hold positive beliefs about smoking (e.g., that smoking helps people to relax and stay slim) and that smokers can quit anytime they want. New education messages and promotional campaigns may help to address the beliefs and attitudes of youth that are still vulnerable to starting to smoking.

The 1994 YSS Technical Report recommended that education programs and messages needed to be tailored to specific audiences.[1] The results of the 2002 YSS provide additional support for this recommendation. Considering that smoking and non-smoking youth have different beliefs and attitudes about smoking, it does not seem efficient or practical to assume that a 'one size fits all' approach to education and message promotion will be suitable. Education and message promotion campaigns might benefit from targeting initiatives to the youth populations who are most likely to respond. The benefits of using a targeted approach to intervention delivery has been previously demonstrated with school-based smoking prevention programming.[14]

More effort in prevention programs is required to emphasize the dangers of occasional smoking and the role that social influences have on smoking onset. This could include teaching youth about the immediate health consequences associated with occasional smoking (e.g., addiction or decreased aerobic sports performance[15]), the immediate social consequences associated with smoking (e.g., most young Canadians would prefer to date a non-smoker), the influence that people in the social environment have on smoking onset (e.g., the benefit of being taught the skills required to refuse cigarette offers from friends), and the benefits of remaining smoke-free (e.g., financial benefits, health and lifestyle benefits). Prevention programs might also benefit from teaching never smoking youth about the role of tobacco industry advertising and promotion on youths' smoking onset.

Future education and message promotion initiatives need to continue to educate youth who smoke about the health benefits of cessation, methods for quitting, and what to expect when quitting. Because of the strong influence of friends in perceived reasons for starting smoking, youth need to be informed about the role that people in the social environment have on smoking maintenance and cessation. For example, being surrounded by smokers can make quitting harder as smoking friends generally do not support quit attempts and often provide cigarettes at time of relapse.[15] Youth cessation programs need to talk to youth in terms they understand, and highlight the immediate positive consequences associated with quitting smoking (e.g., most youth would rather date a non-smoker, improvements in aerobic athletic ability, or financial savings of not smoking) rather than focusing on the long-term benefits. Health warning messages act as an effective means for providing youth with smoking related education and information since the youth could be exposed to such information every time they reach for a cigarette.

Effective education and message promotion is one part of this comprehensive approach. This promotion could target youth of different ages using a variety of different promotional and educational mediums. School-based smoking prevention campaigns could use a best-practices approach, beginning early in elementary school. Based on the 2002 YSS findings, it appears important to target youth as early as grade 5 and 6, as major changes in the beliefs and attitudes about smoking occurred before grade 7. This might be a critical period where interventions could have dramatic results. The messages and information provided in school-based programs could also evolve with the changing needs of students as they age and as cultural changes occur.

It was stated in the 1994 YSS report that there might be some value in educating youth about the aggressive marketing campaigns of tobacco companies with regard to youth.[1] Since 1994, this concept of tobacco industry denormalization has proven beneficial, as demonstrated in the youth-focused Florida Pilot Program on Tobacco Control (FPPTC).[10] The FPPTC used youth-led innovative media approaches (i.e., TRUTH campaign), community activities, and school-based education programs to reduce cigarette use and intentions to smoke among Florida youth. Youth-led programs can address the unique needs of youth, by providing information in a manner that is both appealing and effective for youth. Similar types of youth-led initiatives could run parallel with existing school-based prevention programs.

Implications for Future Monitoring and Further Research

There are several additional aspects of youth beliefs and attitudes that could be monitored in the future, with the goal of gaining a more comprehensive picture of where youth stand in this regard. In addition to views about health beliefs and general attitudes toward smoking, it would be useful to know the levels of youth support for various policy measures (e.g., increased cigarette prices, bans on the display of cigarettes, restrictions on smoking). Preliminary data from the 2003 OSDUS on the attitudes of youth in Ontario indicate that youth were more likely to be supportive of restricting cigarette sales, raising prices and agree that government should make smoking against the law.[16] In the same survey, however, youth were less likely than adults to distrust the tobacco companies; beliefs about and attitudes toward the tobacco industry itself is a key area to monitor as an important mediator of smoking behaviour.

Provincial differences in beliefs and attitudes should continue to be monitored. Although students in Quebec had more positive beliefs about benefits of smoking than students in other provinces, it is hypothesized that this province will move closer to the national average over time, particularly given the decline in adult smoking prevalence in Quebec.[3] However, if, at the time of the next Youth Smoking Survey, youth beliefs and attitudes in Quebec are found not to be approaching the national pattern, strategies targeted specifically toward this group could be considered.

The findings reported in this chapter raise a number of issues that require further research. It has been found that beliefs and attitudes are associated with smoking status, but this cross-sectional survey does not provide insight into questions about causality. Do beliefs and attitudes precede changes in smoking status, or do changes in smoking status result in changes in beliefs and attitudes? Or, are both pathways at work? The evidence is generally in favour of a dual pathway model, but the mechanisms are not fully understood.[12] A longitudinal study design is required to separate these different effects. In addition to determining whether changes in beliefs lead to changes in smoking status, it is essential to establish the relative importance of these determinants in relation to other predictors. Further research could also examine the role of one's environment (including the home, peer, school and community policy environments) in shaping youth beliefs and attitudes.

Future studies could investigate how best to influence youth beliefs and attitudes. Do youth respond well to television media campaigns? What about school programs? Are changes to the policy environment (e.g., restrictions on smoking, increased cigarette prices, reduced availability and accessibility of tobacco products) effective in promoting youth beliefs and attitudes that oppose smoking and support tobacco control? Answers to these questions could lead to more effective program planning.

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Table 7-1a
Beliefs About Harms of Tobacco and Quitting (% Yes) by Sex, Category of Smoker and Grade, Canada, Youth Smoking Survey 2002

	Pop. Est. (000's)	Tobacco is Addictive (% Yes)	ETS Is Harmful to Non-smokers (% Yes)	Occasional Smoking Endangers Health (% Yes)	Quitting Smoking Reduces Damage Even After Years (% Yes)	Smokers Can Quit Anytime (% Yes)	Must Smoke for Many Years Before Hurt Health (% Yes)
Total	**2014**	**88**	**86**	**67**	**37**	**29**	**17**
Grades 5-6	793	83	78	66	31	36	20
Grades 7-9	1222	91	91	68	40	24	16
Never Smoker	1562	87	85	70	35	30	16
Puffer	206	88	89	63	39	25	21
Smoked Beyond Puffing	246	93	91	56	43	26	24
Males	**1032**	**87**	**86**	**67**	**40**	**26**	**20**
Grades 5-6	395	82	78	67	35	32	21
Grades 7-9	618	90	90	68	43	22	19
Never Smoker	800	86	84	70	38	27	18
Grades 5-6	365	82	78	67	42	32	20
Grades 7-9	435	89	90	72	34	22	16
Puffer	112	88	89	63	38	25	23
Grades 5-6	27	81	78	63	35	30	26
Grades 7-9	87	90	92	63	39	23	23
Smoked Beyond Puffing	120	92	90	56	48	23	28
Grades 5-6	13	85	75	59	44	32*	24*
Grades 7-9	106	92	92	56	49	22	29
Females	**982**	**90**	**86**	**67**	**33**	**32**	**15**
Grades 5-6	380	85	78	65	27	39	18
Grades 7-9	586	93	91	69	37	27	13
Never Smoker	762	89	85	70	32	33	14
Grades 5-6	359	85	78	66	27	40	18
Grades 7-9	403	93	91	72	36	27	11
Puffer (b)	94	87	89	63	39	25	19
Grades 5-6	19	89	79	58	25*	31	30*
Grades 7-9	75	81	92	64	43	24	16
Smoked Beyond Puffing	126	93	92	56*	38	28	19
Grades 5-6	11	79	78	48	35*	28*	#
Grades 7-9	115	95	93	57	39	28	19

* Moderate sampling variability interpret with caution
# Data suppressed due to high sampling variability

Table 7-1b
Beliefs About Harms of Tobacco and Quitting (% Yes) by Sex, Category of Smoker and Grade, Canada, Youth Smoking Survey 1994

	Pop. Est. (000's)	Tobacco is Addictive (% Yes)	ETS Is Harmful to Non-smokers (% Yes)	Occasional Smoking Endangers Health (% Yes)	Quitting Smoking Reduces Damage Even After Years (% Yes)	Smokers Can Quit Anytime (% Yes)	Must Smoke for Many Years Before Hurt Health (% Yes)
Total	**1949**	**85**	**84**	**62**	**47**	**17**	**21**
Grades 5-6	747	79	79	67	41	21	21
Grades 7-9	1202	88	87	59	51	14	21
Never Smoker	1163	83	83	70	44	18	18
Puffer	271	86	87	55	49	16	22
Smoked Beyond Puffing	516	87	85	46	53	14	27
Males	997	82	84	63	49	17	23
Females	953	88	84	61	44	17	19

Table 7-2a
Beliefs About Perceived Benefits of Smoking by Sex, Category of Smoker and Grade, Canada, Youth Smoking Survey 2002

	Pop. Est. (000's)	Smoking Helps People Relax (% Yes)	Smoking Helps People Stay Slim (% Yes)	Smoking Helps People when they are Bored (% Yes)
Total	**2014**	**36**	**18**	**13**
Grades 5-6	793	24	12	10
Grades 7-9	1222	49	21	16
Never Smoker	1562	30	15	10
Puffer	206	45	23	16
Smoked Beyond Puffing	246	62	29	27
Males	**1032**	**35**	**17**	**14**
Grades 5-6	395	24	12	10
Grades 7-9	618	42	20	17
Never Smoker	800	30	14	11
Grades 5-6	365	23	12	9
Grades 7-9	435	36	16	13
Puffer	112	43	20	16
Grades 5-6	27	30	14*	14*
Grades 7-9	87	47	22*	17
Smoked Beyond Puffing	120	61	30	29
Grades 5-6	13	47	17	26*
Grades 7-9	106	62	31	30
Females	**982**	**36**	**18**	**12**
Grades 5-6	380	24	13	10
Grades 7-9	586	44	22	14
Never Smoker	762	30	16	10
Grades 5-6	359	23	12	9
Grades 7-9	403	37	19	11
Puffer	94	47	27	16
Grades 5-6	19	32*	19*	23*
Grades 7-9	75	41	29	14
Smoked Beyond Puffing	126	63	29	24
Grades 5-6	11	43*	25*	#
Grades 7-9	115	64	30	25

* Moderate sampling variability interpret with caution
# Data suppressed due to high sampling variability

Table 7-2b
Beliefs About Perceived Benefits of Smoking by Sex, Category of Smoker and Grade, Canada, Youth Smoking Survey 1994

	Pop. Est. (000's)	Smoking Helps People Relax (% Yes)	Smoking Helps People Stay Slim (% Yes)	Smoking Helps People when they are Bored (% Yes)
Total	**1949**	**32**	**18**	**12**
Grades 5-6	747	21	15	8
Grades 7-9	1202	38	20	15
Never Smoker	1163	21	15	7
Puffer	271	35	18	12
Smoked Beyond Puffing	516	53	25	24
Males	997	32	17	13
Females	953	31	19	11

Table 7-3
Perceptions that Smoking Causes More Death than Other Causes by Sex, Category of Smoker and Grade, Canada, Youth Smoking Survey 2002

	Pop. Est. (000's)	More Deaths Than Alcohol (% Yes)	More Deaths Than Suicides (% Yes)	More Deaths Than Accidents (% Yes)	More Deaths Than Murders (% Yes)	More Deaths Than Drugs (% Yes)	More Deaths Than AIDS (% Yes)
Total	**2014**	**60**	**53**	**47**	**43**	**40**	**37**
Grades 5-6	793	59	44	46	37	33	30
Grades 7-9	1222	60	59	48	47	45	42
Never Smoker	1562	60	52	48	42	38	36
Puffer	206	59	56	43	44	41	41
Smoked Beyond Puffing	246	59	56	48	48	50	44
Males	**1032**	**65**	**58**	**52**	**47**	**44**	**42**
Grades 5-6	395	63	49	49	39	35	35
Grades 7-9	618	66	64	53	52	49	48
Never Smoker	800	65	57	52	45	42	40
Grades 5-6	365	64	49	50	39	35	33
Grades 7-9	435	70	63	54	51	66	46
Puffer	112	65	61	46	48	46	48
Grades 5-6	27	64	49	43	38	36	42
Grades 7-9	87	65	64	47	51	49	50
Smoked Beyond Puffing	120	64	65	55	53	57	51
Grades 5-6	13	54	49	52	44	38*	44*
Grades 7-9	106	65	67	55	54	60	52
Females	**982**	**54**	**47**	**43**	**40**	**36**	**32**
Grades 5-6	380	54	39	42	35	30	25
Grades 7-9	586	55	53	43	43	40	37
Never Smoker	762	54	47	43	39	35	31
Grades 5-6	359	54	39	42	35	30	25
Grades 7-9	403	54	54	45	43	39	37
Puffer	94	51	50	39	39	36	33
Grades 5-6	19	47	39	34	28	23*	22*
Grades 7-9	75	53	53	40	43	39	36
Smoked Beyond Puffing	126	54	48	40	43	42	38
Grades 5-6	11	43*	45	30*	38*	26*	38*
Grades 7-9	115	55	48	41	43	44	38

* Moderate sampling variability interpret with caution

Table 7-4
Health Beliefs by Province, Canada, Youth Smoking Survey 2002

		Beliefs about Harms of Tobacco and Quitting							Perceived Benefits			
	Pop Est (000's)	Tobacco is Addictive (% Yes)	ETS is Harmful to Non-smokers (% Yes)	Occasional Smoking Endangers Health (% Yes)	Quitting Smoking Reduces Damage Even After Years (% Yes)	Smokers Can Quit Anytime (% Yes)	Must Smoke for Many Years Before Hurt Health (% Yes)	Nicer to Date Non-smokers (% Yes)	Smoking Helps People Relax (% Yes)	Smoking Helps People Stay Slim (% Yes)	Smoking Helps People when They Are Bored (% Yes)	Smoking is Cool (% Yes)
Canada	**2014**	**88**	**86**	**69**	**36**	**29**	**18**	**74**	**36**	**18**	**13**	**3**
NL	34	93	91	69	34	26	14	72	32	16	11	2
PE	10	91	88	75	38	34	13	76	32	19	10	2
NS	61	91	88	68	37	27	15	71	37	17	14	3
NB	48	83	85	67	35	28	16	67	28	17	13	3
QC	484	79	86	57	36	23	20	64	26	21	14	6
ON	767	91	87	70	36	31	18	77	38	17	12	2
MB	76	86	82	67	37	31	18	75	36	17	15	3
SK	67	92	84	70	36	34	16	74	37	16	12	2
AB	217	94	86	72	37	34	14	78	36	15	13	1
BC	249	90	84	73	39	28	17	80	45	17	14	2

Table 7-5
Health Beliefs by Language Spoken at Home, Perceived Class Standing Relative to Peers, and Percentage of Friends who Smoke, Percentage in the Household who Smoke, Canada, Youth Smoking Survey 2002

		Beliefs about Harms of Tobacco and Quitting						Perceived Benefits				
	Pop Est (000's)	Tobacco is Addictive (% Yes)	ETS is Harmful to Non-smokers (% Yes)	Occasional Smoking Endangers Health (% Yes)	Quitting Smoking Reduces Damage Even After Years (% Yes)	Smokers Can Quit Anytime (% Yes)	Must Smoke for Many Years Before Hurt Health (% Yes)	Nicer to Date Non-smokers (% Yes)	Smoking Helps People Relax (% Yes)	Smoking Helps People Stay Slim (% Yes)	Smoking Helps People when They Are Bored (% Yes)	Smoking is Cool (% Yes)
Canada	**2014**	**88**	**86**	**69**	**36**	**29**	**18**	**74**	**36**	**18**	**13**	**3**
English	1569	91	86	70	36	31	17	77	39	17	13	2
French	458	78	87	57	36	22	21	62	25	22	15	6
Better than Average Class Standing	750	90	88	69	40	27	16	79	35	18	13	2
Average Class Standing	1082	88	85	66	34	30	18	72	35	17	13	3
Below Average Class Standing	168	86	82	62	38	26	24	63	32	21	16	6
No Friends Smoke	1468	88	85	69	35	30	16	77	31	15	11	1
All Friends Smoke	45	86	82	60	43	26	26	41	57	32	28	14
None in household Smoke	1403	88	86	68	36	29	16	77	33	17	[illegible]	2
All in household Smoke	27	90	89	67	42	25	23	55	50	22	25	#

Data suppressed due to high sampling variability

Table 7-6a
Attitudes Toward Smoking by Category of Smoker, Sex and Grade, Canada, Youth Smoking Survey 2002

	Pop Est. (000's)	It's Nicer to Date Non-smokers (% Yes)	Smoking is Cool (% Yes)
Total	**2014**	**74**	**3**
Grades 5-6	793	72	3
Grades 7-9	1222	74	3
Never Smoker	1562	76	1
Puffer	206	71	5
Smoked Beyond Puffing	246	59	11
Males	**1032**	**72**	**3**
Grades 5-6	395	70	3
Grades 7-9	618	73	4
Never Smoker	800	74	2
Grades 5-6	365	71	2
Grades 7-9	435	76	2
Puffer	112	73	4
Grades 5-6	27	69	#
Grades 7-9	87	74	4*
Smoked Beyond Puffing	120	60	13
Grades 5-6	13	64	24*
Grades 7-9	106	59	11
Females	**982**	**75**	**2**
Grades 5-6	380	74	2
Grades 7 to9	586	76	2
Never Smoker	762	79	1
Grades 5-6	359	76	1*
Grades 7-9	403	81	1*
Puffer	94	69	5
Grades 5-6	19	54	#
Grades 7-9	75	73	4*
Smoked Beyond Puffing	126	58	9
Grades 5-6	11	54*	32*
Grades 7-9	115	59	6

* Moderate sampling variability interpret with caution
# Data suppressed due to high sampling variability

Table 7-6b
Attitudes Toward Smoking by Sex, Category of Smoker, and Grade, Canada, Youth Smoking Survey 1994

	Pop Est. (000's)	It's Nicer to Date Non-smokers (% Yes)	Smoking is Cool (% Yes)
Total	**1949**	**69**	**6**
Grades 5-6	747	73	5
Grades 7-9	1202	66	7
Never Smoker	1163	77	2
Puffer	271	70	5
Smoked Beyond Puffing	516	48	16
Males	997	70	7
Females	953	68	6

Table 7-7
Attitudes Toward Smoking by Category of Smoker, Canada, Youth Smoking Survey 2002, 1994

	Pop Est. (000's)	It's Nicer to Date Non-smokers (% Yes)	Smoking is Cool (% Yes)
2002			
Total	**2014**	**74**	**3**
Never Smoker	1562	76	1
Puffer	206	71	5
Smoked Beyond Puffing	246	59	11

	Pop Est. (000's)	It's Nicer to Date Non-smokers (% Yes)	Smoking is Cool (% Yes)
1994			
Total	**1949**	**69**	**6**
Never Smoker	1163	77	2
Puffer	271	70	5
Smoked Beyond Puffing	516	48	16

Table 7-8
Attitudes Toward Smoking by Proportion of Friends Who Smoke and Proportion of Smokers in the Household, Canada, Youth Smoking Survey 2002

	Pop. Est. (000's)	It's Nicer to Date Non-smokers (% Yes)	Smoking is Cool (% Yes)
Proportion of Friends who Smoke	**2014**	**74**	**3**
None	1465	77	1
Less than Half	236	75	4
More than Half	197	60	8
All	45	41	14
Proportion of Smokers in the Household	**2014**	**74**	**3**
None	1400	77	2
Less than Half	309	69	4
More than Half	230	65	4
All	27	56	6

Table 7-9a
Perceived Reasons Youth Start Smoking by Sex, Category of Smoker, and Grade, Canada, Youth Smoking Survey, 2002

	Pop. Est. (000's)	Friends Smoke/ Peer Pressure (% Yes)	Curiosity/ To Try It (% Yes)	Popular Kids Smoke (% Yes)	It's Cool (% Yes)	Parents Smoke (% Yes)	Siblings Smoke (% Yes)	Some-thing to Do (% Yes)	It's Not Allowed (% Yes)	Weight Control (% Yes)	It's Relaxing (% Yes)
Total	**2014**	**64**	**49**	**46**	**45**	**32**	**26**	**15**	**14**	**13**	**12**
Grades 5-6	793	58	39	45	43	33	23	12	9	11	8
Grades 7-9	1222	69	56	46	46	30	27	16	17	14	14
Never Smoker	1562	64	48	49	46	32	26	14	13	13	10
Puffer	206	67	53	42	43	29	24	15	15	11	12
Smoked Beyond Puffing	246	64	54	31	35	29	25	15	17	11	20
Males	**1032**	**61**	**44**	**39**	**41**	**29**	**23**	**13**	**12**	**9**	**12**
Grades 5-6	395	55	36	38	40	31	21	11	9	8	8
Grades 7-9	618	65	49	39	42	27	24	13	14	9	13
Never Smoker	800	61	43	41	42	30	23	13	12	9	10
Grades 5-6	365	56	36	39	40	32	22	12	9	8	7
Grades 7-9	435	66	49	43	44	29	25	13	14	10	11
Puffer	112	62	46	34	40	25	20	18	12	7	11
Grades 5-6	27	52	37	31	30	30	18*	10*	8*	#	#
Grades 7-9	87	65	48	35	43	23	21	11	13	8	12
Smoked Beyond Puffing	120	61	48	27	34	25	23	11	14	7	19
Grades 5-6	13	46	37*	25*	35*	25*	19*	#	#	#	#
Grades 7-9	106	63	49	27	34	25	24	15	15	7	19
Females	**982**	**68**	**54**	**54**	**49**	**34**	**29**	**16**	**15**	**17**	**12**
Grades 5-6	380	60	42	53	47	35	25	13	9	14	7
Grades 7-9	586	72	62	54	49	34	31	19	19	19	16
Never Smoker	762	67	53	57	51	35	29	16	14	18	11
Grades 5-6	359	60	41	53	47	34	25	13	8	14	6
Grades 7-9	403	74	63	60	54	35	33	20	19	21	15
Puffer	94	72	61	50	48	25	29	19	18	15	15
Grades 5-6	19	72	62*	57	54	48*	38	20*	20*	#	#
Grades 7-9	75	72	61	49	46	32	28	18	18	17	13
Smoked Beyond Puffing	126	67	59	36	36	32	26	16	20	15	21
Grades 5-6	11	64	37	41*	46*	33	#	#	#	#	#
Grades 7-9	115	67	61	35	35	34	27	16	20	15	21

* Moderate sampling variability interpret with caution
# Data suppressed due to high sampling variability

Table 7-9b
Perceived Reasons Youth Start Smoking (% yes) by Sex, Category of Smoker, and Grade, Canada, Youth Smoking Survey 1994

	Pop. Est. (000's)	Friends Smoke/ Peer Pressure (% Yes)	Curiosity/ To Try It (% Yes)	Popular Kids Smoke (% Yes)	It's Cool (% Yes)	Parents Smoke (% Yes)	Siblings Smoke (% Yes)	Something to Do (% Yes)	It's Not Allowed (% Yes)	Weight Control (% Yes)	It's Relaxing (% Yes)
Total	**1949**	**74**	**56**	**45**	**46**	**31**	**27**	**17**	**17**	**14**	**12**
Grades 5-6	747	68	49	45	46	32	27	15	11	14	9
Grades 7-9	1202	78	61	46	46	31	28	18	20	14	14
Never Smoker	1163	77	55	53	51	33	29	15	15	15	10
Puffer	271	73	55	43	43	30	27	18	17	12	11
Smoked Beyond Puffing	516	67	60	29	35	28	24	19	21	12	17
Males	997	70	50	39	43	30	24	15	13	9	11
Females	953	78	63	51	49	33	31	18	20	19	13

Table 7-10
Perceived Reasons Youth Start Smoking by Language Spoken at Home, Perceived Class Standing Relative to Peers, and Percentage of Friends who Smoke, Percentage in the Household who Smoke, Canada, Youth Smoking Survey 2002

	Pop. Est. (000's)	Friends Smoke/ Peer Pressure (% Yes)	Curiosity/ To Try It (% Yes)	Popular Kids Smoke (% Yes)	It's Cool (% Yes)	Parents Smoke (% Yes)	Siblings Smoke (% Yes)	Something to Do (% Yes)	It's Not Allowed (% Yes)	Weight Control (% Yes)	It's Relaxing (% Yes)
Total	**2014**	**64**	**49**	**46**	**45**	**32**	**26**	**15**	**14**	**13**	**12**
English	1569	63	48	49	44	32	26	15	13	13	12
French	458	71	55	38	45	32	28	11	16	12	10
Better than Average Class Standing	750	69	55	51	49	35	30	16	17	16	12
Average Class Standing	1082	63	46	45	43	30	24	13	12	11	10
Below Average Class Standing	168	59	44	35	38	31	22	15	14	10	15
No Friends Smoke	1468	64	48	49	46	32	26	13	12	13	9
All Friends Smoke	45	66	45	30	38	28	23	14	14	12	21
None in household Smoke	1403	66	51	49	46	32	27	15	14	14	11
All in household Smoke	27	61	50	36	37	37	26	16	12*	11*	22

* Moderate sampling variability interpret with caution

Table 7-11
Beliefs About Cigarette Package Health Warning Messages by Category of Smoker, Canada, Youth Smoking Survey 2002, 1994

	Pop. Est. (000's)	Believe the Health Warning Message (% Yes)	Agree A Lot with Having Health Warning Message on Cigarette Packages (% Yes)
2002			
Never Smoker	1562	94	87
Puffer	206	92	77
Smoked Beyond Puffing	246	84	61
1994			
Never Smoker	753	91	85
Puffer	223	94	80
Smoked Beyond Puffing	471	87	55

Table 7-12
Percent Who Believe Cigarette Package Health Warning Messages by Frequency of Looking at Health Warning Messages and Category of Smoker, Canada, Youth Smoking Survey 2002

	Pop. Est. (000's)	Never Smoker (% Yes)	Pop. Est. (000's)	Puffer (% Yes)	Pop. Est. (000's)	Smoked Beyond Puffing (% Yes)
Total	**1562**	**94**	**206**	**92**	**246**	**84**
Never	346	91	442	87	52	79
Less than Once a Week	393	94	56	93	62	83
About Once a Week	133	97	28	92	34	86
Once Every 2-3 Days	76	96	14	95	24	88
About Once a Day	56	96	13	94	16	89
A Few Times a Day	43	95	9	93	12	87
> A Few Times a Day	68	96	14	97	18	93

CHAPTER 8 KNOWLEDGE OF HEALTH RISKS

William Morrison, PhD
Faculty of Education
University of New Brunswick

Cynthia Doucet, PhD
Research Associate
University of New Brunswick

Alan Diener, PhD
Tobacco Control Programme
Health Canada

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HIGHLIGHTS

- More than three-quarters of Canadian students in grades 5-9 indicated they had received education on smoking and its impact on health. The percentage of such students varied considerably by province, from 61% in Quebec to 87% in Prince Edward Island and in Newfoundland and Labrador. The overall percentage who reported receiving education increased by 2% from 1994 to 2002.
- The most frequently recalled health problems linked to smoking were "lung cancer," "other cancers," "cardiovascular problems," and "respiratory problems". Other less frequently recalled problems were "mouth problems" and "shortening of lifespan/ causing death".
- The number of health problems recalled tended to be greater among students in higher grades, females, never smokers, and those who reported receiving smoking-related education.
- Of all students in grades 5-9, 35% recalled three or more kinds of health problems related to smoking, 33% identified two problems, and 26% reported one health problem. The remaining 6% did not recall any health problem.
- Exposure to cigarette package health warning messages and recall of various health warning messages were associated with greater involvement in smoking behaviours. The most frequently recalled health warning messages were "lung cancer" and "harms fetus/pregnancy."
- Of all students in grades 5-9, 17% recalled three or more kinds of cigarette package health warning messages, 23% recalled two health warning messages, and 38% recalled one health warning message. Females, older students, and those who had smoked beyond puffing recalled more categories of health warning messages.
- In general, students who recalled specific cigarette package health warning messages cited the same health concerns as those who did not recall specific health warning messages.
- The effectiveness of cigarette package health warning messages may be enhanced if greater emphasis is placed on combining positive messages about the benefits of quitting smoking with current content relating to the negative impact of tobacco use.

METHODS

This section covers definitions and sample issues specific to this chapter. For detailed methods on the entire 2002 Youth Smoking Survey refer to Chapter 2.

Definitions

The intent of this chapter is to examine the findings of the 2002 Youth Smoking Survey (YSS) related to students' recall of health problems and health warning messages pertaining to smoking. These variables were investigated, taking into account sex, grade, exposure to health education, and smoking category.

Open-ended questions were used to assess students' knowledge of specific health problems related to smoking (Y_Q48). Elicited responses were coded and sorted into one of 10 possible categories (Table 8-A). A similar procedure was also used to code and sort data related to recall of health warning messages (Y_Q50B) (Table 8-B). For recall of both health problems and health warning messages, it is important to note that some categories define specific health problem areas, whereas others represent aggregate health issues that have been grouped together. Categories were developed to reflect similarities in specific health problems and health warning messages and to provide a means for making comparisons with data collected in 1994. As a result, variations in recall rates across categories may reflect to some extent the way in which data were initially organized and sorted.

Students' knowledge of specific health problems and health warning messages was also evaluated by counting the number of different health categories they were able to identify. This analysis was undertaken by creation of a new variable that involved coding students' responses as *0, 1, 2,* or *3 or more* problems, based on the number of assigned categories recalled.

The outcomes discussed in the chapter are presented according to five items from the student questionnaire, namely, sex, grade, smoking status, whether smoking-related health education was received (Y_Q58), and province (PROVINCE) for receiving education on smoking-related health problems. With respect to smoking behaviour students' responses on various questionnaire items were employed to determine assignment to one of the following categories: Never Smoker; Puffer; Smoked Beyond Puffing (see Chapter 2, Table 2-C). Questions on awareness of brand ingredients, which were part of the 1994 YSS questionnaire, were omitted in the 2002 YSS questionnaire.

Sample and Response

In general, missing data for items discussed in this chapter accounted for less than 10% of the total responses. As such, the data presented are based on those for whom complete data were available. According to Statistics Canada guidelines, data were deemed non-reportable if the sample size was too small (n<30) or if there was high sampling variability. Only statistically significant group differences are reported. These outcomes were determined using coefficients of variance tables as described in Chapter 2.

Table 8-A

Categories and Coding Scheme for Health Problems Recalled, Youth Smoking Survey 2002

Recalled Category	Coding Includes
Lung Cancer	Bronchial or Lung Cancer
Cardiovascular Problems	Heart Problems, Cardiovascular Problems, Heart Disease, Hypertension, Aortic Aneurysm, Vascular Problems, Heart Attack, Heart Failure, Stroke or Cardiovascular Accident, Brain Problems, Coronary/Pulmonary or Rheumatic Heart Disease
Emphysema/ Asthma	Emphysema Or Asthma
Other Respiratory Problems	Breathing Problems, Blackens Lung Tissue, Bronchitis, Coughing/Wheezing, Harms/Destroys Lungs, Chest Infection, Pneumonia, Shortness of Breath, Chronic Airway Obstruction, Damaged Cilia, Lungs Only, Respiratory Problems, Swelling of Lung Tissue, Tuberculosis
Other Cancer	Unspecified Cancer, Breast, Brain, Lip, Larynx, Mouth, Skin, Throat, Tongue, Other Cancer
Mouth Problems	Gum Disease, Halitosis, Mouth Problems/Diseases, Taste Buds Affected, Tooth Loss/Unhealthy Teeth
Addiction	Addiction
Shortens Lifespan /Causes Death	Reduces Life Expectancy, Kills
Sexual Problems	Impotency
Harms Fetuses And Pregnancy	Hurts Babies Miscarriage

Table 8-B

Categories and Coding Scheme for Cigarette Package Health Warning Messages Recalled, Youth Smoking Survey 2002

Recalled Category	**Coding Includes**
Cardiovascular Problems	Photo of Heart, Strokes "Cigarettes Cause Strokes", Photo of Brain Cut in Half, Clogged Arteries, Heart Problems, "Cigarettes Are a Heartbreaker"
Lung Cancer	"Cigarettes Cause Lung Cancer", Photo of Cancerous Lungs, Picture of a Person in a Breathing Apparatus
Emphysema/Asthma	Reference to Emphysema or Asthma
Other Respiratory Problems	Respiratory/Breathing Problems, Lung Disease Reference, "Cigarettes Leave You Breathless", Picture of Man Coughing
Other Cancer	Cancer (General)
Mouth Problems	Mouth Diseases or Problems, Gum Disease, "Cigarettes Causes Mouth Disease", Blackened Teeth Picture, Tooth Loss/Bad Teeth/Yellow Teeth, Oral Cancer Reference
Addiction	Addiction, "Cigarettes Are Highly Addictive", Hooked on Nicotine, Hard to Quit
Shortens Lifespan /Causes Death	Death/Dying, Picture of Bar Chart: Number Of Deaths, "Each Year the Equivalent of a Small City Dies From Tobacco Use"
Sexual Problems	Sexual Impotence, "Tobacco Use Can Make You Impotent" Reference to Affecting Sex Life, Picture of Bent-Over Lit Cigarette
Second-Hand Smoke	Second-Hand Smoke, "Where There's Smoke There's Hydrogen Cyanide", "You're Not the Only One Smoking This Cigarette", "Idle But Deadly", Picture Of Blue Smoke, Picture of a Single Lit Cigarette, Reference to Smoke Causing Headaches, Weakness, Nausea, Reference to Smoke Containing 50 Cancer Causing Agents
Harms Fetuses And Pregnancy	Impact of Smoking on Pregnancy and Babies, "Cigarettes Hurt Babies", "Tobacco Smoke Hurts Babies", Picture of Pregnant Woman Smoking, Baby in Incubator Picture, Growth Reduction in Premature Babies, Reference to Infant Illness/Death of Baby
Harms Children	Parents Influence on Kids, "Children See, Children Do", "Don't Poison Us", Picture of Mother Smoking with Child Watching, Picture of Two Boys Arm-In-Arm, Reference to Copying Adults, Reference to Poisoning Kids/Hurting Children

FINDINGS

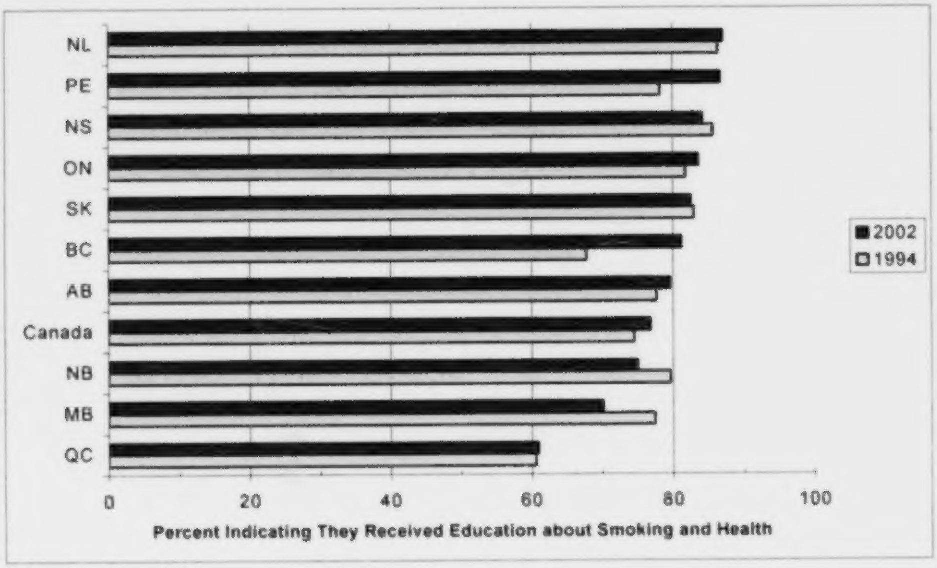
Education About Smoking-Related Health Problems

More than three-quarters (77%) of Canadian students in grades 5-9 reported receiving education on smoking and its impact on health (Table 8-1a). The overall percentage that reported receiving education increased by 2% from the 1994 YSS to the 2002 YSS (Table 8-1b).

The percentage of youth who reported receiving education on smoking-related health problems increased with grade, from 65% in grade 5 to 85% in grade 9. No variations by sex were noted. Comparisons with 1994 data revealed similar patterns according to grade and sex.

In the 2002 YSS, the percentage of students who reported receiving education on smoking-related health problems varied considerably by province, from 61% in Quebec to 87% in Prince Edward Island and in Newfoundland and Labrador (Table 8-2a and Figure 8-A). Increases from the 1994 YSS were found for Prince Edward Island and British Columbia. In two provinces, New Brunswick and Manitoba, the proportions of students in grades 5-9 who reported receiving education were less than those found in the 1994 YSS (Table 8-2b).

Figure 8-A
Received Education about Smoking and Health, by Province, Youth Smoking Survey 2002 and 1994



Awareness of Smoking-Related Health Problems

Of students in grades 5-9 in the 2002 YSS, 49% recalled "lung cancer", and 48% recalled "other cancers" as smoking-related health problems (Table 8-3a). Approximately one-third of students mentioned "cardiovascular" and "respiratory problems." "Mouth problems" and "shortening lifespan or causing death" were recalled by approximately 18% of the sample. The most frequently recalled smoking-related health problems were generally the same in the 1994 YSS analysis (Table 8-3b).

Recall rates were higher among students in grades 7-9 than among those in grades 5-6 for "lung cancer" and "other cancer". In contrast, "shortens lifespan" or "causes death" was recalled at a higher rate among students in grades 5-6.

Recall rates also differed between the sexes in grades 5-9, with females recalling some health problems at higher rates than did males, including "cardiovascular problems," "other respiratory problems," "other cancer" and "mouth problems." In 1994 females also demonstrated a higher recall rate for "lung cancer" than did male students. In comparing the 1994 and 2002 YSS data, analyses revealed that recall rates decreased for "lung cancer" (from 56% to 49%). In contrast, recall rates for other health-related conditions increased: "cardiovascular problems" (from 26% to 30%), "other cancers" (from 32% to 48%), "mouth problems" (from 3% to 18%), and "shortens lifespan/causes death" (from 3% to 18%).

An inverse trend was noted between recall of most health problems and smoking category. In this regard, recall of health problems was greatest among never smokers and least among those who had smoked beyond puffing (Table 8-4a). This trend was evident on a range of health variables including "cardiovascular problems," "other respiratory problems," "mouth problems," and "shortens lifespan/causes death." In contrast to the 2002 outcomes, analyses of the 1994 data revealed no patterns in relation to the category of smoker (Table 8-4b).

Students indicated whether they had received education about smoking-related diseases by responding "Yes," "No," or "I don't know." In the 2002 YSS students who reported they had received education on smoking and health were more likely to recall health problems caused by smoking including "lung cancer," "cardiovascular problems," "other respiratory problems," "other cancer," and "mouth problems" (Table 8-5a). These differences were also observed in 1994 YSS for "lung cancer," "cardiovascular problems," and "other cancer" (Table 8-5b).

Number of Smoking-Related Health Problems Recalled

Of all students in grades 5-9 in the 2002 YSS, 35% recalled three or more kinds of health problems related to smoking, 33% identified two problems, and 26% reported only one health problem and the remaining 6% did not recall any (Table 8-6a). The percentage of students that recalled three or more kinds of health problems increased from 14% in the1994 YSS to 35% in the 2002 YSS whereas the percentage that did not recall any health warning messages decreased from 9% in the 1994 YSS to 6% in the 2002 YSS (Table 8-6b).

In general, students in grades 7-9 recalled more categories of health problems than did students in grades 5-6. In addition, females tended to recall more problems than did males. The percentage of males (females) who recalled three or more health problems increased from 11% (16%) in the 1994 YSS to 29% (41%) in the 2002 YSS. The mean (median) number of health problems recalled increased from 1.6 (1) in the 1994 YSS to 2.2 (2) in 2002 YSS.

In the 2002 YSS an inverse trend was observed between number of health problems recalled and smoking category. The percentage of students who reported three or more kinds of health problems was higher among never smokers (37%) than among those who had smoked beyond puffing (25%) (Table 8-7a). In the 1994 YSS, no such pattern was evident with respect to type of smoker and number of health problems recalled, perhaps due in part to high sampling variability (Table 8-7b).

In the 2002 YSS students who reported receiving smoking-related education were more likely (39%) to recall three or more problems than were those who were unsure about receiving (24%) or who reported not having received this type of education (23%) (Table 8-8a). This pattern was also evident in 1994 YSS outcomes (Table 8-8b).

Awareness of Cigarette Package Health Warning Messages

Students were asked to indicate if they had ever seen health warning messages on cigarette packages. In the 2002 YSS, compared to never smokers (73%), both puffers and those who smoked beyond puffing were more likely to indicate they had observed health warning messages (86% and 90%) (Table 8-9a). A similar pattern was also evident for data collected in the 1994 YSS (Table 8-9b).

Cigarette Package Health Warning Messages Recalled

For the full sample in the 2002 YSS, the most frequently recalled health warning messages were "harms fetus/pregnancy" (32%) and "lung cancer" (23%) (Table 8-10a). The same categories were also the most frequently recalled in the 1994 YSS analysis (Table 8-10b).

Students in grades 7-9 were generally more likely to recall health warning messages than were those in grades 5-6. This was noted for health warning messages related to "lung cancer," "other cancer," "mouth problems," "second-hand smoke" and "harms fetus/pregnancy." This pattern was also evident in the 1994 YSS analysis for health warning messages regarding "lung cancer" and "harms fetus/pregnancy."

In the 2002 YSS, females were more likely than were males to recall health warning messages related to "lung cancer," "mouth problems," "shortens lifespan," "second-hand smoke," "harms fetus/pregnancy," and "harms children." In contrast, males were more likely than were females to cite health warning messages relating to "shortens lifespan/causes death." For the 1994 YSS outcomes, females demonstrated higher recall than did males for health warning messages related to "lung cancer," "second-hand smoke" and "harms fetus/pregnancy."

In the 2002 YSS, increased knowledge of some health warning messages was associated with greater involvement with smoking behaviours. In this regard, those who smoked beyond puffing demonstrated higher rates of recall compared to other groups for health warning messages relating to "mouth problems" and "sexual problems" (Table 8-11a). Those who smoked beyond puffing were also more likely to recall messages about "second-hand smoke" than were never smokers. In the 1994 YSS those who smoked beyond puffing were more likely than never smokers to recall health warning messages for "lung cancer," "second-hand smoke," "shortens lifespan/causes death" and "harms fetus/pregnancy" (Table 8-11b).

In the 2002 YSS there were minimal differences in recall of cigarette package health warning messages noted among students who reported receiving and not receiving education about smoking-related health problems (Table 8-12a). The outcomes of the 1994 YSS analysis are also consistent with this finding (Table 8-12b).

Number of Cigarette Package Health Warning Messages Recalled

Of all students in grades 5-9 in the 2002 YSS, 17% recalled three or more kinds of cigarette package health warning messages, 23% identified two such messages, and 38% reported one health warning message (Table 8-13a). Since 1994, the percentage of students who recalled three or more kinds of health warning messages increased from 14% in the 1994 YSS to 17% in the 2002 YSS, whereas the percentage who did not recall any health warning messages decreased from 39% in the 1994 YSS to 22% in 2002 YSS (Table 8-13b). The mean (median) number of health warning messages recalled increased slightly from 1.2 (1) in the 1994 YSS to 1.4 (1) in 2002 YSS.

In the 2002 YSS students in grades 7-9 were more likely to recall more categories of health warning messages than were those in grades 5-6. With respect to sex, females tended to recall more cigarette package health warning messages than did males. The percentage of females who recalled three or more kinds of health warning messages increased from 17% in the 1994 YSS to 21% in the 2002 YSS.

In the 2002 YSS the percentage of students who recalled three or more kinds of cigarette package health warning messages was higher among those who smoked beyond puffing (21%) than among never smokers (15%) (Table 8-14a). In the 1994 YSS, this pattern was also evident with those who smoked beyond puffing (27%) being more likely than never smokers (9%) to recall three or more health warning messages (Table 8-14b).

The results of the analysis rendered no significant differences among student groups in the number of cigarette package health warning messages recalled, based on receiving health education related to the effects of smoking (Table 8-15a). Similarly, there was no observed relationship evident in the 1994 analysis between receiving education and recalling more health warning messages (Table 8-15b).

Relationship Between Health Knowledge and Cigarette Package Health Warning Messages

In general, students who recalled specific cigarette package health warning messages were also more likely to recall associated health problems related to smoking as compared to those who did not recall the various health warning messages (Table 8-C). For example, of the students who recalled the health warning messages related to "cardiovascular problems", 60% also recalled this condition as a health problem related to smoking. In contrast, of those who did not recall this health warning message, only 28% recalled "cardiovascular problems" as a health condition related to smoking. The overall outcomes of this analysis suggest a potential association between health warning label recall and the recall of specific health problems related to smoking. A similar relationship between these variables was also noted in the 1994 YSS (Table 8-D), suggesting that exposure to cigarette package health warning messages was beneficial for informing students regarding health problems associated with smoking.

Table 8-C
Recall of Health Problem, by Recall of Cigarette Package Health Warning Message, Canada, Youth Smoking Survey 2002

	Percent who Recalled Health Problem			
Cigarette Package Health Warning Messages	Lung Cancer	Cardio-vascular Problems	Emphysema or Asthma	Other Respiratory Problems
Recalled	66.4	59.7	55.0	60.4
Not Recalled	48.2	28.0	7.4	36.6
Proportional Difference of Cigarette Package Health Warning Messages Recalled / Not Recalled	1.4	2.4	7.4	1.7
	Percent who Recalled Health Problem			
Cigarette Package Health Warning Messages	Other Cancer	Mouth Problems	Shortens Lifespan	Sexual Problems
Recalled	64.7	38.1	25.2	13.0
Not Recalled	47.0	18.2	16.7	0.5
Proportional Difference of Cigarette Package Health Warning Messages Recalled / Not Recalled	1.4	2.1	1.5	26.0

Table 8-D
Recall of Health Problem, by Recall of Cigarette Package Health Warning Message, Canada, Youth Smoking Survey 1994

	Percent who Recalled Health Problem			
Cigarette Package Health Warning Messages	Lung Cancer	Cardio-vascular Problems	Other Respiratory Problems	Other Cancer
Recalled	82.3	72.8	63.1	59.7
Not Recalled	49.4	22.9	35.6	26.2
Proportional Difference of Cigarette Package Health Warning Messages Recalled / Not Recalled	1.7	3.2	1.8	2.3

DISCUSSION

Education About Smoking-Related Health Problems

The majority of students surveyed in the 2002 YSS indicated they had been exposed to education relating to smoking and its impact on health. Awareness of specific health education targeting the effects of smoking was also higher among students in grades 7-9 compared with those in lower grades (5-6). In addition, there was considerable variability noted among provinces with respect to reported awareness of education relating to health problems associated with smoking. It is conceivable that differences among provinces with respect to health education awareness exist as a result of the diversity of school-based curriculum planning across educational systems. Because decisions related to the development and implementation of educational programming are under provincial jurisdiction, emphasis related to the delivery of health education focusing on tobacco and its effects may be quite different from one province to another. The finding that older students have greater awareness of specific health education related to smoking is also anticipated, given that these students have experienced a wider range of educational programs and learning opportunities over time. Overall, the outcomes of the 1994 YSS analysis are similar to the findings of the 2002 data-gathering effort.

Awareness of Smoking-Related Health Problems

Similar to exposure to health education, in the 2002 YSS students' recall of health problems associated with smoking increased with years of attendance at school. Compared to males, female students tended to demonstrate greater awareness of specific health problems. Of particular interest is the finding that recall of smoking-related health concerns was higher among those who had never smoked and least among students who had smoked beyond puffing. This might be an issue of self-selection in which those who have tried smoking may choose to ignore the health problems. Different messages may be needed for students who have tried smoking. This trend did not occur in the 1994 YSS.

Health awareness programs are often undertaken on a school-wide basis with the intent of educating all students. Given that smokers in this investigation had lower rates of recall regarding smoking-related health conditions, specific efforts to connect with or reach out to students who have smoked beyond puffing may be an important consideration in planning or implementing school-based health promotion initiatives.

Although further investigation is required to clarify the nature of the relationship between awareness of health problems and smoking behaviour, it is encouraging to note that in the 2002 YSS, higher rates of recall regarding smoking-related health problems were evident among students identified as never smokers. Some research outcomes have reported that students often cite the health effects of smoking as a major reason for not using tobacco industry products.[1] Such outcomes provide support for continuing efforts to educate students regarding the consequences associated with the use of tobacco.

Awareness of Cigarette Package Health Warning Messages

The implementation of health warning messages on cigarette packages has been an important aspect of the Federal Tobacco Control Strategy of Health Canada. The purpose of health warning messages is to increase public awareness regarding the consequences associated with smoking. For health warning messages to be useful, they must not only be noticed, but also be informative and credible to those who observe them.[2]

In the 2002 YSS youth who had smoked beyond puffing were more likely to report they had seen health warning messages than were never smokers. This finding was anticipated, given that students who have direct experience with tobacco packaging would be more likely to have greater exposure to the health warning messages included on cigarette packages. Some research has indicated that adolescent smokers use health warning messages on cigarette packages as a key source of information regarding the health consequences associated with smoking.[3] The effectiveness of health warning messages on cigarette packages has been viewed as comparable to awareness gained through television or through educational programming. Research suggests that many youth smokers view health warning messages as not only effective for informing them about health effects, but also for encouraging them to reduce their smoking around others and to enhance their motivation to quit.[4-6]

Consistent with the outcomes of the 1994 YSS, in the 2002 YSS the most frequently recalled health warning messages were "harms fetus/pregnancy" and "lung cancer." Health warning messages related to cancer may be among the most memorable because of the extent of health promotion that has focused on this condition through other forms of education or awareness programming. This observation was also noted regarding "lung cancer" in the 1994 YSS report, indicating that this "health consequence of smoking is now common knowledge."[7] With respect to "harms fetus /pregnancy," such health warning messages may be more memorable than messages that focus on the long-term effects of tobacco use.[7] It is conceivable that other health information related to physical and social development obtained through school-based health programming may have reinforced students' familiarity with the category "harms fetus/pregnancy."

Since the 1994 administration of the YSS, more health warning messages were introduced, they were made larger, and visual content was added to increase their potential for attracting the attention of individuals to specific health effects associated with smoking.[8] These facts may relate to the finding that a greater range of health warning messages was recalled by students in the 2002 YSS compared to the 1994 YSS. In addition, the percentage of students that recalled three or more kinds of health warning messages increased. It is conceivable that the elaboration of health warning messages to include visual content has contributed to some extent to enhanced awareness of smoking-related health conditions among students.

Relationship Between Health Knowledge and Cigarette Package Health Warning Messages

The intent of health warning messages is to have a meaningful influence on the belief system of individuals and ultimately on the decisions they make regarding their health.[8] For this study, the effect of health warning messages was investigated by examining the awareness of smoking-related health problems among students who recalled and did not recall specific health warning messages. The outcomes supported the hypothesis that students who recalled specific health warning messages were also more likely to cite the associated health concern. This was evident for a wide range of health concerns including "lung cancer," "cardiovascular problems," "emphysema/asthma," "other respiratory problems," "other cancer," "mouth problems," "sexual problems" and "harms fetus/pregnancy." It is important, however, to note that some health conditions were recalled by a large percentage of students regardless of whether they recalled the corresponding health warning messages (e.g., "lung cancer"). These outcomes highlight the potential impact of other means for communicating messages about smoking-related health concerns, such as school health programs, public awareness campaigns, and other sources of personal information that are relevant for students.

Implications for Regulation and Legislation

The outcomes of the 2002 and1994 YSS provide evidence for the importance of health warning messages on cigarette packages as an essential source of information on smoking-related health problems. These findings and the outcomes of other research suggest that health warning messages that pertain directly to youth or that reflect their current life experience may be more meaningful and therefore more memorable for youth.[9] In contrast, health warning messages that target health effects that are not as familiar to youth may not be as easily retained or recalled by youth. In this regard, health warning messages that deal with more immediate health effects associated with smoking may be more compelling and influential for students. Another key consideration includes the importance of recognizing the education and literacy level of students in the designing of health warning messages. In this regard, written and visual health warning messages should be kept simple and direct, and avoid overly complex content.[2]

In both the 1994 and 2002 YSS, there were considerable differences among provinces with respect to student reports about receiving education related to the health effects associated with smoking.[7] Students who reported receiving health education related to smoking were also more likely to recall specific health conditions associated with tobacco use than were those who did not recall health-related school programming. Although diversity in programming across provinces may reflect regional differences in approaches to health education, it is critical that evidence-based practices and the lessons learned from pilot evaluations be used to guide the development and implementation of health education practices across all provinces. Recent innovations in prevention programming in the Canadian context have underscored the importance of applying a Comprehensive School Health (CSH) approach to health education[10]. Such programming efforts not only enhance students' awareness regarding the effects of smoking on health, but also assist them in developing the essential skills for resisting tobacco use through creation of an educational environment that facilitates positive behavioural changes. The CSH framework emphasizes the importance of schools undertaking action in four key areas - instruction, support services, social support and a healthy physical environment - to ensure delivery of both comprehensive and effective approaches for tobacco control programming in the educational context.[11]

Implications for Education and Message Promotion

Although educational programming and cigarette package health warning messages may assist in enhancing students' awareness regarding the health consequences associated with tobacco, such efforts are not always effective in reaching all students who may experiment with smoking. Some researchers have asserted that the effectiveness of health warning messages may be enhanced if greater emphasis is placed on combining positive messages about the benefits of quitting smoking with current content relating to the negative impact of tobacco use. These investigators also reported that such approaches to awareness-building facilitate students' discussion of their beliefs and behaviour pertaining to tobacco use and their personal health.[9] It may also be beneficial to begin educating youth about the health effects associated with smoking in earlier grades as the percentage of those youth who had stated that they had ever received such education increased with grade. To confirm that all youth learn about the health effects of smoking with a focus on both prevention and cessation, a standardized federal curriculum could be developed, to serve as a guide to provincial authorities responsible for curriculum. This would ensure that all youth are receiving the appropriate education with respect to tobacco use at the same stage in their education even if they change school boards or provinces.

Implications for Future Monitoring and Research

Continued research is required to evaluate the long-term effectiveness of cigarette package health warning messages and school-based education. In particular, it may be helpful to track those specific regions and groups that are receiving and not receiving consistent or specific health education related to tobacco use. Other research efforts could also consider potential differences in health awareness among provincial regions that receive different types of school-based education.

Additional research could be undertaken to investigate potential differences in students' perceptions regarding health warning messages that focus on short-term and long-term impacts of smoking. Such research could also examine the attitudes and beliefs of students who have a family member or who know someone else who has experienced a smoking-related health problem. Finally, further research might also address the potential impact of health warning messages and school-based health education that combine positive messages about the benefits of quitting smoking with current content related to the negative effects of smoking.

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Table 8-1a
Ever Received Education about Smoking-related Health Problems in School, by Sex and Grade, Canada, Youth Smoking Survey 2002

Sex and Grade	Pop. Est. ('000)	Received Education (%)		
		Yes	No	Don't Know
Total, 5-9	**2 ,000.0**	**76.8**	**12.7**	**10.6**
5-6	785.5	69.6	16.3	14.1
7-9	1,214.4	81.4	10.4	8.3
5	386.7	64.9	18.5	16.6
6	398.9	74.3	14.2	11.6
7	419.1	78.4	11.2	10.4
8	401.3	80.9	11.5	7.6
9	394.0	85.0	8.3	6.7
Males, 5-9	**1,023.9**	**76.7**	**13.4**	**9.8**
5-6	400.8	69.9	17.1	13.0
7-9	623.1	81.1	11.1	7.8
Females, 5-9	**976.0**	**76.8**	**11.9**	**11.3**
5-6	384.7	69.4	15.4	15.2
7-9	591.3	81.7	9.5	8.8

Table 8-1b
Ever Received Education about Smoking-related Health Problems in School, by Sex and Grade, Canada, Youth Smoking Survey 1994

		Received Education (%)		
Sex and Grade	**Pop. Est. ('000)**	**Yes**	**No**	**Don't Know**
Total, 5-9	**1,917.4**	**74.5**	**15.1**	**10.4**
5-6	729.1	66.6	18.3	15.1
7-9	1,188.3	79.4	13.2	7.5
5	315.3	60.4	19.4	20.3
6	413.8	71.4	17.4	11.1
7	386.1	77.9	14.6	7.4
8	395.7	77.1	14.2	8.0
9	406.4	82.3	10.8	7.0
Males, 5-9	**977.4**	**74.8**	**15.3**	**10.0**
5-6	378.8	67.5	17.9	14.6
7-9	598.7	79.3	13.7	7.0
Females, 5-9	**939.9**	**74.3**	**14.9**	**10.8**
5-6	350.3	65.7	18.7	15.6
7-9	589.6	79.4	12.7	8.0

Table 8-2a
Ever Received Education About Smoking-Related Health Problems in School, by Province, Canada, Youth Smoking Survey 2002

		Received Education (%)		
Province and Grade	**Pop. Est. ('000)**	**Yes**	**No**	**Don't Know**
Canada, 5-9	1,998.7	**76.8**	**12.6**	**10.6**
5-6	784.2	69.8	16.3	13.9
7-9	1,214.5	81.3	10.3	8.4
NL, 5-9	33.6	**87.1**	**5.0**	**7.9**
5-6	12.2	82.7	4.9*	12.4
7-9	21.4	89.6	5.1*	5.4*
PE, 5-9	10.0	**86.7**	**5.9***	**7.4**
5-6	3.9	69.8	8.8*	10.9*
7-9	6.1	81.3	4.0*	5.3*
NS, 5-9	60.9	**84.2**	**7.3**	**8.4**
5-6	23.2	77.5	8.7	13.7
7-9	37.7	88.4	6.4	5.2
NB, 5-9	48.2	**75.0**	**12.8**	**12.2**
5-6	18.4	73.2	11.9	14.9
7-9	29.8	76.2	13.3	10.6
QC, 5-9	477.1	**61.0**	**25.2**	**13.8**
5-6	186.4	47.3	33.4	19.3
7-9	290.6	69.8	19.9	10.3
ON, 5-9	762.0	**83.6**	**7.1**	**9.4**
5-6	305.1	80.3	8.8	11.0
7-9	456.9	85.7	6.0	8.3
MB, 5-9	75.2	**70.1**	**15.4**	**14.6**
5-6	28.4	54.1	21.8	24.1
7-9	46.8	79.7	11.4	8.8
SK, 5-9	66.9	**82.5**	**8.3**	**9.1**
5-6	25.6	77.9	9.6*	12.5
7-9	41.3	85.4	7.6	7.0
AB, 5-9	218.0	79.6	9.4	9.0
5-6	86.1	72.7	12.5*	11.9*
7-9	131.9	84.1	8.9	7.0*
BC, 5-9	246.8	**81.2**	**9.4**	**9.4**
5-6	94.8	75.4	12.5	12.1
7-9	152.0	84.9	7.4	7.7

* Moderate sampling variability; interpret with caution

Table 8-2b
Ever Received Education about Smoking-related Health Problems in School, by Province, Canada, Youth Smoking Survey 1994

		Received Education (%)		
Province and Grade	**Pop. Est. ('000)**	**Yes**	**No**	**Don't Know**
Canada, 5-9	**1,917.4**	**74.5**	**15.1**	**10.4**
5-6	729.1	66.6	18.3	15.1
7-9	1,188.3	79.4	13.2	7.5
NL, 5-9	**44.2**	**86.4**	**6.7**	**6.9**
5-6	14.8	82.7	8.4*	8.9*
7-9	29.4	88.3	5.8*	5.9*
PE, 5-9	**9.5**	**78.2**	**11.2**	**10.6**
5-6	3.5	74.7	11.2*	14.1
7-9	6.0	80.3	11.2	8.6
NS, 5-9	**61.4**	**85.7**	**6.1**	**8.2**
5-6	24.5	81.3	7.7*	11.0
7-9	36.8	88.7	5.0*	6.4
NB, 5-9	**50.8**	**79.6**	**10.2**	**10.2**
5-6	18.1	77.1	8.9*	14.0*
7-9	32.7	81.0	11.0	8.0*
QC, 5-9	**468.6**	**60.6**	**26.7**	**12.7**
5-6	184.3	52.0	32.2	15.8
7-9	284.3	66.2	23.2	10.6
ON, 5-9	**700.0**	**81.8**	**9.8**	**8.4**
5-6	263.7	75.2	11.6*	13.2*
7-9	436.2	85.8	8.7*	5.5*
MB, 5-9	**74.0**	**77.4**	**10.6**	**12.1**
5-6	25.5	66.1	15.1	18.9
7-9	48.5	83.3	8.2*	8.5
SK, 5-9	**75.5**	**83.0**	**8.4**	**8.6**
5-6	29.2	74.8	11.7*	13.5
7-9	46.3	88.3	6.2*	5.5*
AB, 5-9	**200.0**	**77.7**	**11.4**	**10.8**
5-6	84.0	71.2	13.1	15.7
7-9	116.0	82.4	10.3	7.3*
BC, 5-9	**233.4**	**67.8**	**19.5**	**12.7**
5-6	81.4	56.6	24.3	21.2
7-9	152.0	74.9	17.0	8.2

* Moderate sampling variability; interpret with caution

Table 8-3a
Smoking-related Health Problems Recalled, by Sex and Grade, Canada, Youth Smoking Survey 2002

					Recalled Health Problems (%)		
Sex and Grade	Pop. Est. ('000)	Lung Cancer	Cardio-vascular Problems	Other Respira-tory Problems	Other Cancer	Mouth Problems	Shortens Lifespan
Total, 5-9	**1,952.8**	**49.3**	**30.4**	**38.1**	**48.4**	**18.3**	**18.3**
5-6	769.2	43.2	32.0	38.2	44.2	16.6	24.1
7-9	1,185.6	53.3	29.3	37.9	51.1	19.3	14.5
Males, 5-9	**992.3**	**48.2**	**28.7**	**34.1**	**46.8**	**15.2**	**17.3**
5-6	387.8	42.2	30.6	35.7	41.1	13.6	22.5
7-9	604.4	52.0	27.4	33.0	50.4	16.2	14.0
Females, 5-9	**960.5**	**50.4**	**32.1**	**42.2**	**50.0**	**21.4**	**19.3**
5-6	381.4	44.2	33.5	40.8	47.4	19.7	25.6
7-9	579.2	54.6	31.1	43.1	51.7	22.6	15.1

Table 8-3b
Smoking-related Health Problems Recalled, by Sex and Grade, Canada, Youth Smoking Survey 1994

					Recalled Health Problems (%)		
Sex and Grade	Pop. Est. ('000)	Lung Cancer	Cardio-vascular Problems	Other Respira-tory Problems	Other Cancer	Mouth Problems	Shortens Lifespan
Total, 5-9	**1,949.3**	**55.8**	**25.8**	**38.3**	**31.7**	**2.8**	**2.6**
5-6	698.6	44.7	22.9	38.7	31.1	1.7*	3.2*
7-9	1,146.8	62.6	27.6	38.2	32.0	3.4	2.2
Males, 5-9	**996.6**	**53.4**	**24.3**	**37.4**	**30.5**	**2.9**	**2.4***
5-6	390.1	42.8	21.9	38.7	29.1	1.8*	2.7*
7-9	606.5	60.1	25.9	36.6	31.4	3.6*	2.3*
Females, 5-9	**952.7**	**58.3**	**27.3**	**39.3**	**32.8**	**2.6**	**2.7**
5-6	357.2	46.6	23.9	38.6	33.2	1.7*	3.7*
7-9	595.4	65.1	29.3	39.7	32.6	3.2*	2.1*

* Moderate sampling variability; interpret with caution

Table 8-4a
Smoking-related Health Problems Recalled, by Category of Smoker and Grade, Canada, Youth Smoking Survey 2002

		Recalled Health Problems (%)					
Category of smoker	Pop. Est. ('000)	Lung Cancer	Cardio-vascular Problems	Other Respira-tory Problems	Other Cancer	Mouth Problems	Shortens Lifespan
Never Smoker							
5-9	**1,514.0**	**49.2**	**31.9**	**38.8**	**48.0**	**19.3**	**20.1**
5-6	701.7	43.0	32.9	39.1	44.3	17.0	24.8
7-9	812.5	54.4	31.1	38.7	51.2	21.2	16.1
Puffer							
5-9	**198.5**	**49.8**	**25.6**	**37.0**	**51.7**	**16.9**	**13.2**
5-6	43.8	46.3	22.8*	32.8*	45.1	10.4*	#
7-9	154.7	50.8	26.3	38.2	53.6	18.7	13.2
Smoked Beyond Puffing							
5-9	**240.0**	**49.7**	**24.3**	**34.0**	**48.1**	**13.2***	**10.8***
5-6	23.7	41.9*	#	#	41.2*	#	#
7-9	216.3	50.6	24.4	35.1	48.8	12.8	#

* Moderate sampling variability; interpret with caution
# Data suppressed due to high sampling variability

Table 8-4b
Smoking-related Health Problems Recalled, by Category of Smoker and Grade, Canada, Youth Smoking Survey 1994

		Recalled Health Problems (%)					
Category of smoker	Pop. Est. ('000)	Lung Cancer	Cardio-vascular Problems	Other Respira-tory Problems	Other Cancer	Mouth Problems	Shortens Lifespan
Never Smoker							
5-9	**1,053.8**	**52.1**	**25.0**	**41.0**	**31.3**	**3.0**	**2.7**
5-6	536.3	43.4	23.2	41.4	30.1	1.9*	3.2*
7-9	517.6	60.8	26.8	40.5	32.6	4.1*	2.2*
Puffer							
5-9	**270.6**	**58.1**	**26.4**	**36.5**	**32.0**	**3.1***	**2.6***
5-6	88.3	45.4	22.6	33.3	35.3	#	#
7-9	182.3	64.3	28.3	38.1	30.4	3.8*	#
Smoked Beyond Puffing							
5-9	**429.6**	**63.1**	**27.3**	**34.3**	**32.2**	**2.1***	**2.3***
5-6	70.1	54.8	20.4*	26.1*	34.4	#	#
7-9	359.5	64.4	28.3	35.6	31.9	2.3*	2.4*

* Moderate sampling variability – interpret with caution
# Data suppressed due to high sampling variability

Table 8-5a
Smoking-related Health Problems Recalled, by Whether or not Received Smoking-related Education, and Grade, Canada, Youth Smoking Survey 2002

		Recalled Health Problems (%)					
Taught About Smoking And Health	**Pop. Est. ('000)**	**Lung Cancer**	**Cardio-vascular Problems**	**Other Respira-tory Problems**	**Other Cancer**	**Mouth Problems**	**Shortens Lifespan**
Yes							
5-9	**1, 495.6**	**51.6**	**32.7**	**39.1**	**49.9**	**20.0**	**18.1**
5-6	533.2	46.3	35.6	39.9	45.6	19.1	24.7
7-9	962.4	54.6	31.0	38.7	52.3	20.4	14.5
Don't Know							
5-9	**198.5**	**41.7**	**22.1**	**35.0**	**43.6**	**13.2**	**21.4**
5-6	104.6	36.2	23.3	33.0	41.0	12.0	24.3
7-9	93.9	47.7	20.7	37.2	46.4	14.4	18.2
No							
5-9	**240.0**	**42.1**	**24.1**	**34.7**	**42.7**	**12.6**	**16.4**
5-6	120.2	36.2	25.5	35.8	40.3	10.8	20.7
7-9	119.8	48.1	22.3	33.7	45.2	14.3	12.1

Table 8-5b
Smoking-related Health Problems Recalled, by Whether or not Received Smoking-related Education, and Grade, Canada, Youth Smoking Survey 1994

					Recalled Health Problems (%)		
Taught About Smoking And Health	**Pop. Est. ('000)**	**Lung Cancer**	**Cardio-vascular Problems**	**Other Respira-tory Problems**	**Other Cancer**	**Mouth Problems**	**Shortens Lifespan**
Yes							
5-9	**1,428.7**	**57.7**	**28.0**	**38.7**	**33.1**	**3.0**	**2.4**
5-6	485.8	46.0	24.8	39.2	33.2	2.2*	3.2*
7-9	942.9	63.6	29.6	38.4	33.1	3.4	1.9*
Don't Know							
5-9	**199.2**	**50.5**	**18.5**	**36.1**	**27.9**	**3.0***	**#**
5-6	110.1	42.4	18.4*	39.9	28.0	#	#
7-9	89.1	60.7	18.8*	31.4	27.8	#	#
No							
5-9	**289.4**	**51.4**	**19.6**	**38.9**	**27.3**	**#**	**3.8***
5-6	133.1	43.8	18.9	36.7	26.2	#	#
7-9	156.3	57.8	20.2	40.8	28.3	#	#

* Moderate sampling variability; interpret with caution
# Data suppressed due to high sampling variability

Table 8-6a
Number of Smoking-related Health Problems Recalled, by Sex and Grade, Canada, Youth Smoking Survey, 2002

		Number of Health Problems Recalled (%)				
Sex and Grade	Population Estimate ('000)	0	1	2	3 and over	Mean (Median) Number of Health Problems Recalled
Total,						
5-9	**2,027.5**	**6.2**	**26.0**	**33.1**	**34.8**	**2.2 (2)**
5-6	802.9	7.3	27.5	33.4	31.7	2.1 (2)*
7-9	1224.6	5.4	25.0	32.8	36.8	2.2 (2)
Males,						
5-9	**1039.1**	**7.4**	**30.4**	**33.1**	**29.3**	**2.0 (2)***
5-6	409.5	8.4	32.2	33.9	25.6	1.9 (2)*
7-9	629.6	6.8	28.8	32.7	31.8	2.1 (2)*
Females,						
5-9	**988.4**	**4.8**	**21.6**	**33.0**	**40.6**	**2.3 (2)***
5-6	393.4	6.3	22.6	33.0	38.2	2.3 (2)*
7-9	595.0	3.9	21.0	33.0	42.2	2.4 (2)*

* Moderate sampling variability; interpret with caution

Table 8-6b
Number of Smoking-related Health Problems Recalled, by Sex and Grade, Canada, Youth Smoking Survey 1994

		Number of Health Problems Recalled (%)				
Sex and Grade	**Population Estimate ('000)**	**0**	**1**	**2**	**3 and over**	**Mean (Median) Number of Health Problems Recalled**
Total,						
5-9	**1,949.3**	**8.6**	**41.8**	**36.1**	**13.5**	**1.6 (1)**
5-6	747.3	11.7	48.4	31.7	8.2	1.4 (1)
7-9	1,201.9	6.7	37.7	38.9	16.8	1.7 (2)
Males,						
5-9	**996.6**	**10.8**	**44.4**	**34.1**	**10.8**	**1.4 (1)**
5-6	390.1	14.1	49.3	29.6	7.1*	1.3 (1)
7-9	606.5	8.6	41.2	37.0	13.2	1.6 (2)
Females,						
5-9	**952.7**	**6.3**	**39.1**	**38.2**	**16.4**	**1.7 (2)**
5-6	357.2	9.1	47.6	34.0	9.4	1.4 (1)
7-9	595.4	4.7	34.1	40.7	20.5	1.8 (2)

* Moderate sampling variability; interpret with caution

Table 8-7a
Number of Smoking-related Health Problems Recalled, by Category of Smoker and Grade, Canada, Youth Smoking Survey 2002

		Number of Health Problems Recalled (%)				
Category of Smoker	Population Estimate ('000)	0	1	2	3 and over	Mean (Median) Number of Health Problems Recalled
Never Smoker						
5-9	**1,570.60**	**6.0**	**24.6**	**32.9**	**36.5**	**2.2 (2)**
5-6	730.3	6.9	26.7	33.7	32.8	2.1 (2)
7-9	840.3	5.2	22.7	32.3	39.8	2.3 (2)
Puffer						
5-9	207.8	**7.3**	**27.7**	**33**	**32.1**	**2.1 (2)**
5-6	46.4	11.4*	35.1	30.7	22.8	1.8 (2)
7-9	161.4	6.1*	25.6	33.6	34.7	2.1 (2)
Smoked Beyond Puffing						
5-9	249.1	**16.3**	**33.4**	**33.9**	**25.3**	**1.9 (2)***
5-6	26.1	#	#	#	#	1.7 (1)*
7-9	222.9	#	33.0	34.3	27.2	2.0 (2)*

* Moderate sampling variability; interpret with caution
# Data suppressed due to high sampling variability

Table 8-7b
Number of Smoking-related Health Problems Recalled, by Category of Smoker and Grade, Canada, Youth Smoking Survey 1994

		Number of Health Problems Recalled (%)				
Category of Smoker	**Population Estimate ('000)**	**0**	**1**	**2**	**3 and over**	**Mean (Median) Number of Health Problems Recalled**
Never Smoker						
5-9	**1,162.5**	**8.9***	**43.3**	**35.0**	**12.9***	**1.5 (1)***
5-6	585.0	11.0*	48.0	32.4	#	1.4 (1)*
7-9	577.5	#	38.4	37.6	17.3*	1.7 (2)*
Puffer						
5-9	270.6	**#**	**41.3**	**37.7**	**#**	**#**
5-6	88.3	#	52.7	30.6	#	#
7-9	182.3	#	35.8	41.2	#	#
Smoked Beyond Puffing						
5-9	**516.1**	**#**	**38.8**	**37.7**	**14.9***	**1.6 (2)***
5-6	74.0	#	47.0	26.4*	#	#
7-9	442.1	#	37.4	39.6	16.3*	1.7 (2)

* Moderate sampling variability; interpret with caution
# Data suppressed due to high sampling variability

Table 8-8a
Number of Smoking-related Health Problems Recalled, by Whether or Not Received Smoking-related Education and Grade, Canada, Youth Smoking Survey 2002

Taught About Smoking and Health	Population Estimate ('000)	Number of Health Problems Recalled (%) 0	1	2	3 and Over	Mean (Median) Number of Health Problems Recalled
Yes,						
5-9	**1,535.0**	**4.3**	**23.6**	**33.5**	**38.6**	**2.3 (2)**
5-6	547.0	4.9	23.7	34.8	36.7	2.2 (2)
7-9	988.0	4.0	23.5	32.9	39.6	2.3 (2)
Don't Know,						
5-9	**211.1**	**11.2**	**31.9**	**32.5**	**24.4**	**1.8* (2)**
5-6	110.4	11.3	35.6	30.8	22.3	#
7-9	100.7	11.2	27.8	34.4	26.6	#
No,						
5-9	**253.8**	**9.8**	**35.1**	**31.7**	**23.4**	**1.8* (2)**
5-6	128.1	10.4	37.1	30.7	21.8	#
7-9	125.7	9.1	33.1	32.7	25.1	#

* Moderate sampling variability; interpret with caution
# Data suppressed due to high sampling variability

Table 8-8b
Number of Smoking-related Health Problems Recalled, by Whether or Not Received Smoking-related Education and Grade, Canada, Youth Smoking Survey 1994

Taught About Smoking and Health	Population Estimate ('000)	Number of Health Problems Recalled (%)				
		0	1	2	3 and Over	Mean (Median) Number of Health Problems Recalled
Yes						
5-9	**1,428.7**	**7.0**	**39.7**	**37.5**	**15.8**	**1.6 (2)**
5-6	485.8	9.7	46.7	33.5	10.1	1.4 (1)
7-9	942.9	5.6	36.1	39.6	18.7	1.7 (2)
Don't Know						
5-9	**199.2**	**14.7**	**45.7**	**33.2**	**6.4***	**1.3 (1)**
5-6	110.1	16.6*	48.8	31.0	#	#
7-9	89.1	12.3*	41.9	35.9	9.9*	#
No						
5-9	**289.5**	**10.5**	**48.9**	**32.2**	**8.4**	**1.4 (1)**
5-6	133.1	13.7*	53.9	26.6	5.9*	#
7-9	156.4	7.8*	44.7	36.9	10.6*	#

* Moderate sampling variability; interpret with caution
# Data suppressed due to high sampling variability

Table 8-9a
Awareness of Cigarette Package Health Warning Messages, by Category of Smoker, and Grade, Canada, Youth Smoking Survey 2002

		Have You Ever Seen Health Warning Messages on Cigarette Packages?
Category of Smoker	Population Estimate ('000)	Yes
Never Smoker, 5-9	**1,549.6**	**73.0**
5-6	720.0	69.0
7-9	829.6	76.4
Puffer, 5-9	**206.5**	**86.3**
5-6	44.8	81.9
7-9	161.7	87.5
Smoked Beyond Puffing, 5-9	**244.7**	**89.8**
5-6	24.1	79.1
7-9	220.6	90.9

Table 8-9b
Awareness of Cigarette Package Health Warning Messages, by Category of Smoker, and Grade, Canada, Youth Smoking Survey 1994

		Have You Ever Seen Health Warning Messages on Cigarette Packages?
Category of Smoker	Population Estimate ('000)	Yes
Never Smoker, 5-9	**1,157.4**	**64.8**
5-6	581.2	57.7
7-9	576.1	71.9
Puffer, 5-9	**269.2**	**82.1**
5-6	87.0	78.4
7-9	182.2	83.8
Smoked Beyond Puffing, 5-9	**514.1**	**91.2**
5-6	73.0	82.1
7-9	441.1	92.7

Table 8-10a
Cigarette Package Health Warning Messages Recalled, by Sex and Grade, Canada, Youth Smoking Survey 2002

						Health Warning Messages Recalled (%)			
Sex and Grade	**Pop. Est. ('000)**	**Lung Cancer**	**Cardio-vascular Problems**	**Other Cancer**	**Mouth Problems**	**Shortens Lifespan**	**Second Hand Smoke**	**Harms Fetus/ Preg-nancy**	**Harms Children**
Total, 5-9	**1,437.9**	**22.9**	**13.6**	**16.4**	**12.6**	**12.7**	**12.5**	**32.4**	**19.7**
5-6	515.0	17.6	14.5	14.7	9.5	12.0	9.1	27.2	20.7
7-9	922.9	25.8	13.1	17.4	14.4	13.0	14.4	35.3	19.2
Males, 5-9	**690.8**	**20.9**	**13.6**	**15.6**	**11.0**	**14.0**	**10.0**	**24.3**	**16.4**
5-6	243.0	15.9	14.5	14.4	8.2	13.0	7.2	19.0	18.5
7-9	447.8	23.6	13.1	16.3	12.6	14.5	11.5	27.2	15.4
Females, 5-9	**747.1**	**24.7**	**13.6**	**17.3**	**14.1**	**11.4**	**14.8**	**39.8**	**22.8**
5-6	272.0	19.1	14.5	15.0	10.7	11.1	10.8	34.5	22.7
7-9	475.1	28.0	13.0	18.6	16.1	11.6	17.2	42.8	22.8

Table 8-10b
Cigarette Package Health Warning Messages Recalled, by Sex and Grade, Canada, Youth Smoking Survey 1994

						Health Warning Messages Recalled (%)			
Sex and Grade	**Pop. Est. ('000)**	**Lung Cancer**	**Cardio-vascular Problems**	**Other Cancer**	**Mouth Problems**	**Shortens Lifespan**	**Second Hand Smoke**	**Harms Fetus/ Preg-nancy**	**Harms Children**
Total, 5-9	**1,439.3**	**29.7**	**8.2**	**19.7**	**#**	**11.6**	**4.7**	**48.6**	**5.3**
5-6	463.8	23.7	6.6	18.4	#	11.5	3.6*	35.5	5.0*
7-9	975.5	32.5	9.0	20.4	#	11.7	5.2	54.8	5.4
Males, 5-9	**701.4**	**25.3**	**7.8**	**20.1**	**#**	**12.1**	**9.8**	**40.6**	**4.6**
5-6	231.5	20.3	7.3*	18.7		12.1	6.6*	29.9	4.4*
7-9	470.0	27.8	8.1	20.8	#	12.1	11.4	45.8	4.8*
Females, 5-9	**737.8**	**33.8**	**8.6**	**19.3**	**#**	**11.2**	**14.4**	**56.2**	**5.9**
5-6	232.3	27.0	6.0*	18.0	#	10.9	9.6*	41.1	5.6*
7-9	505.5	36.9	9.9	19.9	#	11.4	17.0	63.1	6.0

* Moderate sampling variability; interpret with caution
# Data suppressed due to high sampling variability

Table 8-11a
Cigarette Package Health Warning Messages Recalled, by Category of Smoker and Grade, Canada, Youth Smoking Survey 2002

		Health Warning Messages Recalled (%)						
Category of Smoker	Pop. Est. ('000)	Lung Cancer	Cardio-vascular Problems	Mouth Problems	Shortens Lifespan	Sexual Problems	Second Hand Smoke	Harms Fetus/ Preg-nancy
Never Smoker 5-9	**1,066.4**	**23.3**	**14.1**	**12.1**	**12.6**	**4.1**	**11.3**	**30.5**
5-6	463.7	18.0	15.0	9.6	11.9	1.3*	8.9	26.4
7-9	602.7	27.4	13.9	14.0	13.2	6.3	13.2	33.7
Puffer 5-9	**162.9**	**23.0**	**13.8**	**12.4**	**13.5**	**8.3**	**14.8**	**37.9**
5-6	33.3	11.9*	9.2*	#	15.0*	#	#	38.2
7-9	129.6	25.9	14.9	13.0	13.2	8.8	15.6	37.3
Smoked Beyond Puffing 5-9	**208.5**	**20.6**	**11.0**	**15.6**	**12.1**	**14.8**	**16.8**	**37.9**
5-6	17.9	#	#	#	#	#	#	#
7-9	190.6	20.8	10.8	16.4	12.3	16.0	17.4	38.8

* Moderate sampling variability; interpret with caution
# Data suppressed due to high sampling variability

Table 8-11b
Cigarette Package Health Warning Messages Recalled, by Category of Smoker and Grade, Canada, Youth Smoking Survey 1994

		Health Warning Messages Recalled (%)						
Category of Smoker	**Pop. Est. ('000)**	**Lung Cancer**	**Cardio-vascular Problems**	**Mouth Problems**	**Shortens Lifespan**	**Sexual Problems**	**Second Hand Smoke**	**Harms Fetus/ Preg-nancy**
Never Smoker, 5-9	**749.6**	**27.8**	**7.3**	**#**	**22.3**	**#**	**3.3***	**42.2**
5-6	335.6	23.9	6.8*	#	21.1	#	4.0*	34.2
7-9	414.0	31.0	7.7	#	23.3	#	2.8*	48.7
Puffer, 5-9	**220.9**	**30.9**	**8.1***	**#**	**24.2**	**#**	**3.5***	**51.1**
5-6	68.2	23.7*	#	#	22.2*	#	#	38.5
7-9	152.6	34.2	9.3*	#	25.1	#	#	56.8
Smoked Beyond Puffing, 5-9	**468.8**	**32.0**	**9.8**	**#**	**37.8**	**#**	**7.4***	**57.6**
5-6	60.0	22.6*	#	#	24.6*	#	#	39.4
7-9	408.8	33.4	10.2	#	39.7	#	8.2*	60.2

* Moderate sampling variability; interpret with caution
# Data suppressed due to high sampling variability

Table 8-12a
Cigarette Package Health Warning Messages Recalled, by Whether or Nor Received Education about Smoking-related Health Problems in School, and Grade, Canada, Youth Smoking Survey 2002

		Health Warning Messages Recalled (%)						
Taught about Smoking and Health	Pop. Est. ('000)	Lung Cancer	Cardio-vascular Problems	Other Cancer	Shortens Lifespan	Second Hand Smoke	Harms Fetus/ Preg-nancy	Harms Children
Yes 5-9	**1,130.7**	**23.8**	**14.0**	**16.8**	**12.6**	**12.8**	**33.0**	**19.5**
5-6	368.7	18.2	15.1	5.3*	11.6	9.6	28.4	20.2
7-9	761.9	26.4	13.5	17.4	13.1	14.4	35.3	19.2
Don't Know 5-9	**129.3**	**19.0**	**10.8***	**14.8***	**13.6***	**10.0***	**30.1**	**20.6**
5-6	60.1	15.7*	14.0*	11.9*	11.3*	#	23.9*	22.8*
7-9	69.2	21.8*	#	17.4*	15.6	12.7*	35.4	18.6*
No 5-9	**165.7**	**21.1**	**13.5**	**16.2**	**12.6***	**11.8***	**30.2**	**20.7**
5-6	78.9	17.4	13.4	14.6	14.7*	#	24.8	22.0*
7-9	86.8	24.5	13.7*	17.7*	10.7*	16.2*	35.0	19.4*

* Moderate sampling variability; interpret with caution
# Data suppressed due to high sampling variability

Table 8-12b
Cigarette Package Health Warning Messages Recalled, by Whether or Nor Received Education about Smoking-related Health Problems in School, and Grade, Canada, Youth Smoking Survey 1994

		Health Warning Messages Recalled (%)						
Taught about Smoking and Health	Pop. Est. ('000)	Lung Cancer	Cardio-vascular Problems	Other Cancer	Shortens Lifespan	Second Hand Smoke	Harms Fetus/ Preg-nancy	Harms Children
Yes 5-9	**1,093.8**	**31.3**	**8.2**	**20.3**	**28.2**	**4.2**	**49.5**	**5.3**
5-6	318.0	25.4	6.5*	19.7	23.1	3.6*	36.1	5.3*
7-9	775.9	33.7	8.9	20.6	30.3	4.4	55.0	5.3
Don't Know 5-9	**126.4**	**24.9**	**8.0***	**15.2***	**26.3**	**7.1***	**46.7**	**#**
5-6	58.0	21.9*	#	14.8*	18.7*	#	34.1	#
7-9	68.4	27.6	8.8*	15.6*	32.7	10.8*	57.3	#
No 5-9	**199.3**	**25.0**	**9.1***	**19.9**	**26.2**	**5.9***	**47.4**	**7.2***
5-6	77.6	18.7*	7.5*	16.9*	18.6*	#	35.6	#
7-9	121.7	28.9	10.0*	21.7	31.1	6.8*	54.9	7.6*

* Moderate sampling variability; interpret with caution
# Data suppressed due to high sampling variability

Table 8-13a
Number of Cigarette Package Health Warning Messages Recalled, by Sex and Grade, Canada, Youth Smoking Survey 2002

Number of Health Warning Messages Recalled (%)

Sex and Grade	Population Estimate ('000)	0	1	2	3 and Over	Mean (Median) Number of Health Warning Messages Recalled
Total, 5-9	**1,524.10**	**22.2**	**37.7**	**23.3**	**16.8**	**1.4 (1)**
5-6	549.2	27.4	39.8	21.7	11.1	1.2 (1)
7-9	974.9	19.3	36.6	24.2	20.0	1.5 (1)
Males, 5-9	**748.6**	**26.5**	**40.6**	**20.1**	**12.8**	**1.2 (1)**
5-6	267.7	33.1	40.5	18.1	8.3	1.0 (1)
7-9	480.9	22.8	40.7	21.3	15.2	1.4 (1)
Females, 5-9	**775.4**	**18.1**	**34.9**	**26.3**	**20.7**	**1.6 (1)**
5-6	281.5	22.1	39.1	25.1	13.7	1.4 (1)
7-9	493.9	15.9	32.5	27.0	24.7	1.7 (2)

Table 8-13b
Number of Cigarette Package Health Warning Messages Recalled, by Sex and Grade, Canada, Youth Smoking Survey 1994

Number of Health Warning Messages Recalled (%)

Sex and Grade	Population Estimate ('000)	0	1	2	3 and Over	Mean (Median) Number of Health Warning Messages Recalled
Total, 5-9	**1,949.3**	**38.9**	**24.6**	**22.1**	**14.4**	**1.2 (1)***
5-6	747.3	52.1	25.6	15.2	7.1	#
7-9	1,201.9	30.8	24.0	26.3	18.9	1.4 (1)*
Males, 5-9	**996.6**	**43.4**	**26.2**	**19.1**	**11.4***	**1.0 (1)***
5-6	390.1	54.9	26.9	13.4	4.8*	#
7-9	606.5	36.0	25.8	22.7	15.6	1.2 (1.)*
Females, 5-9	**952.7**	**34.3**	**23.0**	**25.2**	**17.4**	**1.3 (1)***
5-6	357.2	49.0	24.3	17.2	9.6	#
7-9	595.4	25.4	22.2	30.1	22.2	1.6 (2)*

* Moderate sampling variability; interpret with caution
# Data suppressed due to high sampling variability

Table 8-14a

Number of Cigarette Package Health Warning Messages Recalled, by Category of Smoker and Grade, Canada, Youth Smoking Survey 2002

Category of Smoker	Population Estimate ('000)	Number of Health Warning Messages Recalled (%) 0	1	2	3 and Over	Mean (Median) Number of Health Warning Messages Recalled
Never Smoker,						
5-9	**1,127.3**	**23.1**	**38.0**	**23.4**	**15.4**	**1.4 (1)**
5-6	492.4	27.3	39.6	22.3	10.9*	1.2 (1)*
7-9	634.9	19.9	36.8	24.3	19.1	1.5 (1)*
Puffer,						
5-9	**176.3**	**19.3**	**39.6**	**21.4**	**19.8**	**1.5 (1)***
5-6	37.0	24.1	46.0	15.1*	14.8*	#
7-9	139.2	18.0	37.9	23.0	21.1	#
Smoked Beyond Puffing,						
5-9	**220.5**	**20.0***	**34.7**	**24.0***	**21.3***	#
5-6	19.8	#	#	#	#	#
7-9	200.7	18.4*	34.8	24.5*	22.4*	#

* Moderate sampling variability; interpret with caution

# Data suppressed due to high sampling variability

Table 8-14b

Number of Cigarette Package Health Warning Messages Recalled, by Category of Smoker and Grade, Canada, Youth Smoking Survey 1994

		Number of Health Warning Messages Recalled (%)				
Category of Smoker	**Population Estimate ('000)**	**0**	**1**	**2**	**3 and Over**	**Mean (Median) Number of Health Warning Messages Recalled**
Never Smoker,						
5-9	**1,162.6**	**48.9**	**25.0**	**17.3**	**8.9**	**0.9 (1)***
5-6	585.0	56.2	24.0	12.9	#	#
7-9	577.5	41.4	25.9	21.7	11.0	#
Puffer,						
5-9	**270.6**	**30.2**	**28.8**	**26.5**	**14.4**	#
5-6	88.3	35.1	35.0	23.1	6.8*	#
7-9	182.3	27.9	25.8	28.2	18.2	#
Smoked Beyond Puffing,						
5-9	**516.1**	**21.2**	**21.8**	**30.5**	**26.6**	**1.7 (2)***
5-6	74.0	39.3	27.5	24.0*	#	#
7-9	442.1	18.1*	20.8*	31.6	29.4	1.9 (2)*

* Moderate sampling variability; interpret with caution
# Data suppressed due to high sampling variability

Table 8-15a
Number of Cigarette Package Health Warning Messages Recalled, by Whether or Not Received Smoking-related Education and Grade, Canada, Youth Smoking Survey 2002

		Number of Health Warning Messages Recalled (%)				
Taught About Smoking And Health	**Population Estimate ('000)**	**0**	**1**	**2**	**3 and Over**	**Mean (Median) Number of Health Warning Messages Recalled**
Yes, 5-9	**1,193.3**	**21.2**	**37.4**	**24.1**	**17.3**	**1.4 (1)**
5-6	391.8	26.9	38.7	23.1	11.4	1.2 (1)
7-9	801.5	18.4	36.7	24.6	20.2	1.6 (1)
Don't Know, 5-9	**140.0**	**27.4**	**39.0**	**20.6**	**13.0**	**1.3* (1)**
5-6	64.8	30.1	43.1	18.0	8.8*	#
7-9	75.2	25.1	35.6	22.9	16.4	#
No, 5-9	**176.9**	**24.1**	**38.1**	**20.5**	**17.3**	**1.4* (1)**
5-6	84.4	27.3	41.3	18.8	12.6	#
7-9	92.5	21.2	35.2	22.0	21.6	#

* Moderate sampling variability; interpret with caution
# Data suppressed due to high sampling variability

Table 8-15b
Number of Cigarette Package Health Warning Messages Recalled, by Whether or Not Received Smoking-related Education and Grade, Canada, Youth Smoking Survey 1994

		Number of Health Warning Messages Recalled (%)				
Taught About Smoking And Health	**Population Estimate ('000)**	**0**	**1**	**2**	**3 and Over**	**Mean (Median) Number of Health Warning Messages Recalled (%)**
Yes, 5-9	**1,428.7**	**36.2**	**24.9**	**23.6**	**15.4**	**1.2 (1)**
5-6	485.8	48.3	27.0	16.7	8.0	0.9 (1)
7-9	942.9	29.9	23.8	27.1	19.1	1.4 (1)
Don't Know, 5-9	**199.2**	**48.4**	**25.3**	**16.4**	**9.9***	**0.9 (1)***
5-6	110.1	60.7	23.2	11.4*	#	#
7-9	89.1	33.1	28.0	22.5	16.4*	#
No, 5-9	**289.5**	**43.4**	**24.2**	**18.6**	**13.8***	**1.1 (1)***
5-6	133.1	56.3	24.6	12.5*	#	#
7-9	156.4	32.3	23.7	23.9	20.1*	#

* Moderate sampling variability; interpret with caution
# Data suppressed due to high sampling variability

CHAPTER 9 - TOBACCO ACCESS

Caroline C. Murphy, BSc
Department of Health Care and Epidemiology
University of British Columbia

Chris Y. Lovato, PhD
Department of Health Care and Epidemiology
University of British Columbia

Murray J. Kaiserman, PhD
Tobacco Control Programmme
Health Canada

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HIGHLIGHTS

- The majority of students obtained cigarettes from social sources; 75% of students reported buying, receiving, or taking cigarettes from family and friends.
- About half of students who attempted to purchase cigarettes in a store were asked their age and to show ID. More than half of students who attempted to purchase cigarettes in a store were refused the sale.
- About half of students who reported obtaining cigarettes from retail outlets do nothing special in their attempts to purchase cigarettes.
- 60% of students who smoked usually smoked the same brand, and 52% reported they do so because they like the taste.
- Students in the 2002 YSS faced more challenges in their attempts to purchase cigarettes than did students in the 1994 YSS. In the 1994 YSS, students were less likely to report someone had refused to sell them cigarettes.
- Banning point of sale displays, implementing product labelling legislation, increasing the number of smoke-free spaces, and further enforcement of restrictions on the sale of tobacco to minors will be important strategies for preventing tobacco access and use among young people.

METHODS

This section covers definitions and sample issues specific to this chapter. For detailed methods on the entire 2002 Youth Smoking Survey refer to Chapter 2.

Definitions

Categories of Smokers

The definitions used to categorize smokers in the 2002 Youth Smoking Survey (YSS) are described in Chapters 2 and 3. Some of the analyses related to tobacco access and smoking behaviour were conducted using the five category derived variable (Never Smoker who has Never Seriously Thought About Smoking; Never Smoker who has Seriously Thought About Smoking; Puffer; Smoked Beyond Puffing, Not Daily Smoker; and Daily Smoker). However, in most cases only the final two categories (Smoked Beyond Puffing, Not Daily Smoker; and Daily Smoker) are reported. Analyses of the behaviours of Puffers, Never Smokers who have Seriously Thought About Smoking, and Never smokers who have Never Seriously Thought About Smoking would be irrelevant because they are unlikely to regularly access cigarettes.

Source of Cigarettes

All students were asked, "Where do you usually get your cigarettes?" (Y_Q25). Response choices included various retail and/or social sources and the response, "I don't smoke." Retail sources included buying cigarettes from: 1) a vending machine, 2) a small grocery/corner store, 3) another kind of store, and 4) buying cigarettes on the

Internet. Social sources included receiving cigarettes from: 1) a brother/sister, 2) mother/father and 3) a friend or someone else. Other social sources included taking cigarettes from a family member or buying cigarettes from a friend or someone else. Findings are reported for students who were categorized as smokers according to the above definitions.

Attempts to Purchase Cigarettes

All students were asked, "Have you ever been asked your age when buying cigarettes in a store for yourself or for someone else?" (Y_Q27), "Have you ever been asked for an ID when trying to buy cigarettes?" (Y_Q28), and "Has anyone in a store ever refused to sell you cigarettes?" (Y_Q29).

The findings on purchasing behaviours apply only to those students who have ever bought cigarettes in a store. These results should be interpreted with caution, because the questions asked about lifetime experiences and not recent experiences. There is a higher probability that older students who have purchased cigarettes have "ever" been asked their age as compared to younger students, since they are likely to have made more purchase attempts in their lifetime. In contrast, older students may be less likely to remember they had "ever" been asked their age if this had not occurred in the recent past.

Strategies Used to Purchase Cigarettes

Students were asked about the strategies they used when buying cigarettes from a store (Y_Q26). Findings are reported for both smoked beyond puffing, not daily smokers and daily smokers. It is important to note that this item was an open-ended question and respondents were able to provide personal responses. Qualitative response results are not available and detailed responses were grouped into an "other" category. Students were also asked, "Have you ever asked a stranger to buy you cigarettes?" (Y_Q30). Findings are reported for all students, regardless of smoking category.

Purchase of Single Cigarettes

All students were asked, "Do you sometimes buy single cigarettes?" (Y_Q31a). Respondents who answered 'yes' were then asked, "Where do you buy them?" (Y_Q31b). Response choices included: 1) at a small grocery/corner store, 2) in another kind of store, and 3) I buy them from a friend or someone else.

Usual Brand and Type of Cigarettes

Students were asked, "Do you usually smoke the same brand of cigarettes?" (Y_Q22a). Those answering "yes" were then asked for more information regarding the brand and type of cigarettes they usually smoke (Y_Q22b), reasons for smoking certain brands (Y_Q23), and whether or not they switched brands during the 12 months preceding the survey (Y_Q24).

Cigarette brand names were suppressed after the data were collected, as well as other sensitive or identifying information. Information regarding the usual brand and type of cigarettes smoked is reported using the derived variables (DVSMOKE) (strength of cigarettes smoked) and (DVLOWTAR) (the tar content range of cigarettes).

Sample and Response

Much of this chapter refers to information obtained from two subsamples of students surveyed; those categorized as ever smokers and those who ever purchased cigarettes. Some subgroup sizes are small thus affecting the reliability of the estimates and preventing detailed comparisons. All estimates with a high variability (coefficient of variation of 33% or greater) or sample size less than 30 were suppressed.

Statements about differences betweens subgroups are based on the 0.05 level of confidence calculated using coefficient of variation tables. Assessment of significance was undertaken by employing the Coefficient of Variation Tables from Chapter 2. Missing data were excluded from percentage total calculations and "don't know" answers were included as valid responses.

Of particular importance to note is that comparisons across provincial subpopulations were often unreportable. Given the low prevalence of smoking among students, provincial sample sizes were generally very small and the data highly variable.

Comparisons to the 1994 YSS

Where possible, data from the 1994 and 2002 YSS were compared. Several questions regarding youth tobacco purchasing and tobacco company sponsorship and marketing in the1994 YSS were not repeated in the 2002 YSS. The excluded questions addressed brand recognition and perceived attractiveness of cigarette packages, and knowledge of cigarette corporation-sponsored events and advertisements.

FINDINGS

Source of Cigarettes

In the 2002 YSS smokers (smoked beyond puffing, not daily smokers and daily smokers) most often reported usually obtaining cigarettes from social sources; 75% of students reported buying, receiving, or taking cigarettes from family or friends (Table 9-A). Friends were key providers of cigarettes; 29% were given cigarettes by a friend or someone else and 24% usually bought cigarettes from a friend (Figure 9-A). Family members were also an important source of cigarettes; 13% of these smokers reported a family member usually gives them cigarettes and 8% responded they usually "take" them from a family member. Of the one quarter (25%) of students who reported their usual source for obtaining cigarettes was purchasing at a retail outlet (Table 9-2a), more reported they usually purchased cigarettes at a small grocery/corner store (20%) than at other stores (3%).

Table 9-A
Usual Source of Cigarettes, by Grade, Sex and Category of Smoker, Canada, Youth Smoking Survey 2002

	Where Do You Usually Get Cigarettes? (%)	
Grade	Retail Source	Social Source
Total, 5-9	**25.2**	**74.8**
Males, 5-9	31.6	68.5
Females, 5-9	19.9	80.1
Smoked Beyond Puffing, 5-9 (a)	18.3	81.7
Daily Smokers, 5-9	40.5	59.5

(a) Smoked Beyond Puffing, Not Daily Smoker

Figure 9-A
Usual Place Cigarettes Obtained, by Students who Smoke*, Grades 5-9, Canada, Youth Smoking Survey 2002, 1994

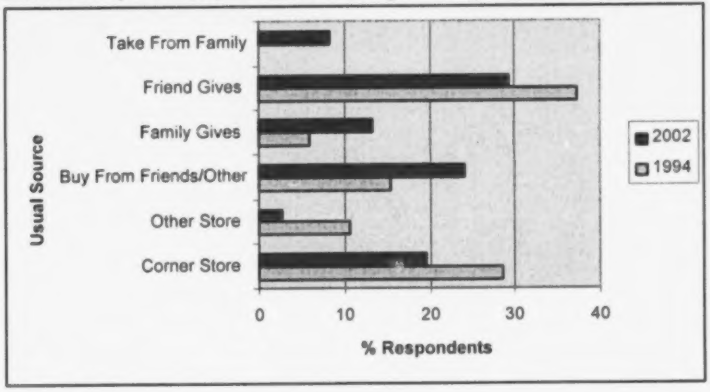


Figure 9-A

*Includes Smoked Beyond Puffing, Not Daily Smokers and Daily Smokers

Note: In 1994, students were not asked whether or not they usually take cigarettes from family members.

It was not possible to compare differences regarding the social availability of cigarettes between older (grades 7-9) and younger students (grades 5-6), and behaviours of students in each of grades 7, 8, and 9 were similar. Both male and female students reported a heavy reliance on social sources to obtain cigarettes; differences were not statistically significant (Table 9-2a).

Not surprisingly, daily smokers were less reliant on social sources for obtaining cigarettes, and their usual sources differed from smoked beyond puffing, not daily smokers. Eighty-two percent (82%) of smoked beyond puffing, not daily smokers usually obtained cigarettes from social sources, whereas only 60% of daily smokers did (Table 9-A). While both groups were equally likely to buy cigarettes from friends, daily smokers were less reliant on friends to give them cigarettes than smoked beyond puffing, not daily smokers (11% and 37%, respectively), and significantly more likely to buy cigarettes at a corner store (35%) than smoked beyond puffing, not daily smokers (13%) (Table 9-B). Daily smokers were more likely to obtain cigarettes from family members (23%) than smoked beyond puffing, not daily smokers (9%). However, an additional 10% of smoked beyond puffing, not daily smokers said they took cigarettes from a family member. Thus, families may be an equally important source of cigarettes for both daily and smoked beyond puffing, not daily smokers. This is an interesting finding given that young people are more likely to smoke if someone else in their home also smokes (Table 9-B). Please refer to Chapters 5 and 10 for a full discussion on social influences and restrictions on smoking.

Table 9-B
Usual Place Cigarettes Obtained, by Grade and Category of Smoker, Canada, Youth Smoking Survey 2002

	Where do you usually get cigarettes? (%)					
	Retail Sources					Social Sources
Grade	Corner Store	Other Store	Buy from Friend/Other	Family	Friend Gives	Take from Family
Total, 5-9	**19.6**	**2.8***	**24.1**	**13.3**	**29.2**	**8.3***
Smoked Beyond Puffing, 5-9 (a)	12.9	#	25.2	8.9*	37.3	10.4*
Daily Smokers, 5-9	34.6	#	21.7*	23.0	11.0*	#

(a) Smoked Beyond Puffing, Not Daily Smokers

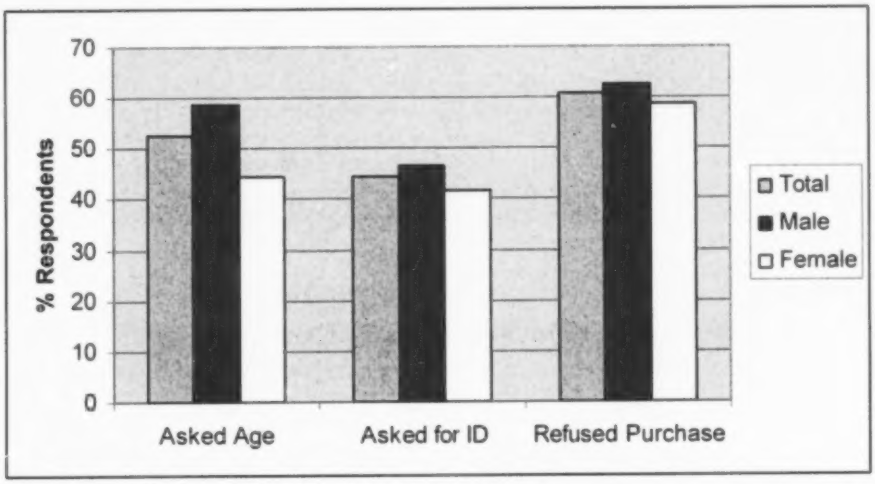
It is not possible to compare provincial findings due to high variability of the data (Table 9-4).

Compared to the findings of the 1994 YSS (Figure 9-A and Table 9-2b), two significant changes were noted in the 2002 YSS with regard to where smokers reported usually obtaining cigarettes; 1) social sources have become more important, and 2) within the social environment, regular sources of cigarettes are different. Fewer smokers reported purchasing cigarettes in retail environments (22.4% in the 2002 YSS and 39.4% in the 1994 YSS), and they were more likely to purchase, rather than receive cigarettes from friends (29% in the 2002 YSS and 16% in the 1994 YSS). In the 2002 YSS, 20% and 3% of students purchased cigarettes at a corner store or other store, respectively; in contrast, 29% and 11% of students in the 1994 YSS usually obtained cigarettes at a corner store or other store, respectively. Several changes were also evident in the distribution of cigarettes through social sources. In the 2002 YSS, students reported receiving cigarettes from friends less often than in the 1994 YSS (29% versus 37%, respectively). In contrast, more students reported buying cigarettes from friends in the 2002 YSS than in the 1994 YSS (24% versus 16%, respectively) (Table 9-2b).

Attempts to Purchase Cigarettes

Among students in the 2002 YSS who attempted to purchase cigarettes in stores, approximately half (53%) had been asked their age, 44% had been asked to show identification, and 61% had been refused the purchase of cigarettes (Figure 9-B). Experiences for male and female students were similar (Figure 9-B and Table 9-5a). The data do not allow for grade comparisons. Also, comparisons of provincial findings are not possible due to high variability of the data. Please refer to Chapter 10 for a description and discussion of students' knowledge of legal age to purchase cigarettes.

Figure 9-B
Attempts to Purchase Cigarettes, by Students who Smoke*, Canada, Youth Smoking Survey 2002



*Smoked Beyond Puffing, Not Daily Smokers and Daily Smokers

In the 1994 YSS, students were asked whether they had ever been asked their age or ever been refused purchase when trying to buy cigarettes. Reports of being asked their age in the 2002 and 1994 YSS were similar (53% and 48%, respectively). In the 1994 YSS fewer students reported someone had refused to sell them cigarettes (51%), compared to such reports in the 2002 YSS (61%) (Table 9-5b).

Strategies Used for Purchasing Cigarettes

When asked about how they go about buying cigarettes from a store, approximately half (53%) of smoked beyond puffing, not daily smokers and daily smokers reported they do not buy cigarettes from stores, and 19% reported they do nothing special. Other strategies were to ask an older person (12%) or to ensure they know the clerk (11%) before attempting the purchase. A small proportion of students reported they try to look older (6%) (Table 9-6).

Strategies used to purchase cigarettes were similar for males and females. Younger students (grades 5-6) were more likely to report they do not buy cigarettes from stores (72%) than older students (52%) (grades 7-9). Two thirds of smoked beyond puffing, not daily smokers reported they do not buy cigarettes from stores (66%) compared to only one quarter (26%) of daily smokers. Daily smokers were more likely than smoked beyond puffing, not daily smokers to report that they do nothing special (28% and 15%, respectively) or ask an older person to purchase cigarettes for them (23% and 7%, respectively). Additionally, daily smokers were more likely than smoked beyond puffing, not daily smokers to ensure they know the clerk before buying cigarettes in a store (16% and 8%, respectively) (Table 9-6).

Given the small sample sizes, a provincial comparison of strategies used by students to purchase cigarettes in stores is not possible. However, the majority of grades 5-9 students in all provinces reported they do not buy cigarettes from stores (Table 9-7).

All students, including students who do and do not smoke, were asked whether they had ever asked a stranger to purchase cigarettes for them; few students ever had (5%) (Table 9-8). Males and females reported similar behaviours (4% and 5%, respectively); however, older students (grades 7-9) were more likely to ask a stranger (7%) than were students in grades 5-6 (1%).

Daily smokers were significantly more likely to report they had ever asked a stranger to buy cigarettes for them (75%) than all other smokers (Table 9-9). One quarter (25%) of smoked beyond puffing, not daily smokers had asked a stranger to buy cigarettes for them. Provincial differences were minimal; students living in Quebec were most likely to report they had asked a stranger to buy cigarettes for them (10%) (Table 9-10).

Attempts to Purchase Single Cigarettes

In the 2002 YSS a very small proportion of smoked beyond puffing, not daily smokers and daily smokers reported purchasing single cigarettes (3%) (data not shown). Of those who reported purchasing single cigarettes, an overwhelming majority of both males and females bought them from friends (88%). Few reported they had purchased single cigarettes at a small grocery or corner store (16%). Grade differences are unreportable due to high variability of the data.

Usual Brand and Type of Cigarettes Smoked

In the 2002 YSS the majority of both male and female students who smoked in the 30 days preceding the survey reported they usually smoke the same brand of cigarettes (60%) (Table 9-11a). Daily smokers were more likely to report usually smoking the same brand than smoked beyond puffing, not daily smokers (74% and 54%, respectively). In the 1994 YSS (Table 9-11b) these smokers were more likely than those in 2002 to report they usually smoked the same brand (81% and 60%, respectively).

Among those students who reported usually smoking the same brand of cigarettes in the 2002 YSS, 66% reported smoking "regular" and 28% reported smoking "light/mild" cigarettes (Table 9-11a). Seven percent (7%) of students reported they smoke "ultra/extra mild" cigarettes. Similar proportions of males and females reported they smoke regular and light/mild cigarettes; differences across grades are unreportable.

While 35% of smokers smoked beyond puffing, not daily smokers and daily smokers) claimed they smoke a "light/mild" or "ultra/extra light/mild" brand of cigarettes, evidence of this is not present in the corresponding tar levels; almost all smokers (97%) reported smoking brands with tar levels of 10 mg or greater (Table 9-11a). There is a lack of correspondence between tar delivery and product descriptor; tar delivery is a function of cigarette engineering while the descriptor is a marketing tool. The data seem to indicate that youth are choosing cigarettes designed to deliver nicotine with minimum effort; such cigarettes are designed so that smokers may easily adjust their nicotine uptake upwards.

There were no significant differences between males and females regarding the strength or the tar levels of cigarettes smoked (Table 9-11a). Provincial comparisons were not possible due to insufficient sample sizes, and thus highly variable data (Table 9-12).

Approximately half of both male and female smokers (52% each) reported their choice of usual brand of cigarettes is largely determined by taste (Table 9-13a). One quarter (24%) of students reported they smoke the cigarette they do because it is the same brand that friends smoke, and 15% of smokers responded their usual brand is the same brand their parents smoke. Eleven percent (11%) of students reported they smoke the brand they do because they are the only cigarettes available. Daily smokers were more likely to report their brand preference was determined by taste (68%) than were smoked beyond puffing, not daily smokers (42%), whereas smoked beyond puffing, not daily smokers were more likely to choose a cigarette brand because their friends smoke the same brand (32%, smoked beyond puffing, not daily smokers and 12%, daily smokers). Provincial comparisons were not possible due to insufficient sample sizes, and thus highly variable data.

Smokers (smoked beyond puffing, not daily smokers and daily smokers) in the 1994 YSS were more likely to report their brand preference was determined by taste, compared to similar smokers in the 2002 YSS (62% and 52%, respectively) (Table 9-14b). Similar proportions of students in the 1994 and 2002 YSS reported their brand choice was determined by the availability of cigarettes (10%) (Tables 9-13a, b). Among those students who usually smoked the same brand of cigarettes, similar proportions in the 1994 and 2002 YSS reported switching brands in the year preceding the survey (39% and 42%, respectively) (Tables 9-14a,b).

DISCUSSION

Since the 1994 YSS, several tobacco control policies have been implemented in an effort to reduce tobacco consumption. Examples include the *Tobacco Sales to Young Persons Act* (1994), making it illegal to sell or provide tobacco products to a person under the age of 18, the *Act to Amend the Tobacco Act* (1998) calling for a ban of tobacco sponsorship promotions, and the introduction of graphic health warning messages on cigarette packages (2000). Additionally, both provincial and federal taxes on tobacco products have steadily increased since the smuggling-induced tax rollback in 1994. Combined, such initiatives and other potential influences in the social and physical environment have led to a decrease in youth smoking prevalence, yet access to tobacco products remains relatively easy.

Overview of 2002 YSS Findings

Findings of the 2002 YSS provide evidence regarding sources for and strategies used by Canadian students to obtain cigarettes. Male and female youth smokers most often acquired cigarettes through social sources, from both family and friends. Daily smokers were less reliant on social sources for accessing cigarettes, and more than one third usually purchased cigarettes at small grocery/corner stores. About half of youth who buy cigarettes in stores reported doing nothing special in their attempts, and were not always asked their age, to show identification, or refused purchase.

The majority of all grades 5-9 students usually reported smoking the same brand of cigarettes. These students reported brand preference is largely determined by taste, although some smoke the brands smoked by friends and family members. Thirty-five percent (35%) reported they smoked "light/mild" or "ultra/extra light/mild" cigarettes, and 39% switched brands during the year preceding the survey.

Comparison to the 1994 YSS

Students in both the 1994 and 2002 YSS were most likely to report obtaining cigarettes through social sources; however, important changes were noted in the proportion of students who receive cigarettes from friends and who access cigarettes through retail outlets. In 1994, students were more likely to report purchasing cigarettes in retail outlets and faced fewer challenges in their attempts to purchase cigarettes. These students were also less likely to report that someone had refused to sell them cigarettes.

Data from both surveys are similar regarding the proportion of students who regularly smoked the same brand of cigarettes and reasons for choosing specific brands.

Implications for Regulation and Legislation

Tobacco Sales

In Canada, it is against the law to sell or provide tobacco products to persons under the age of 18. Under the Tobacco Act, passed in 1997, it is illegal to furnish "a tobacco product to a young person in a public place or in a place to which the public reasonably has access." Additional legislation in the provinces of British Columbia, Ontario, Nova Scotia, New Brunswick, Newfoundland and Labrador, and Prince Edward Island prohibits the sale of tobacco to people under 19 years. Despite such legislation, one quarter of Canadian youth in grades 5-9 who smoked beyond puffing, not daily or daily reported they usually purchase cigarettes in retail environments. The entire sample was too young to legally purchase cigarettes, yet only 61% of youth reported that anyone had refused to sell them cigarettes. These findings correspond with evidence from other Canadian studies suggesting that it is far too easy for minors to obtain cigarettes. A report of retailers' behaviour towards youth access-to-tobacco restrictions indicated that only 68% of retailers refused to sell cigarettes to underage Canadians[1].

Youth access laws make it more difficult for most youth to obtain cigarettes, yet laws alone are not enough to impact youth smoking behaviour. Oftentimes, youth seek and find retailers who will sell cigarettes to them. However, even full compliance is not sufficient to prevent youth access; youth are able to obtain cigarettes from social sources.

Be that as it may, restrictions on the sale of tobacco to minors remain an important strategy for preventing tobacco use among youth. Social sources do not substitute access to cigarettes through commercial sources; instead, they may mitigate the impact of sales bans and restrictions. Youth who purchase cigarettes in retail environments are likely to give them away or sell them to others[2]. American studies show that teens increasingly rely on non-commercial sources, including friends, other underage youth and adults, to purchase or give cigarettes to them[3]. In Minnesota in 2000, 60% of current smokers in middle school and 71% of current smokers in high school reported social sources were their primary means of obtaining cigarettes[4]. In a study examining the correlates of social exchange of cigarettes, 90% of students surveyed had obtained a cigarette from another teen, while 75% had provided cigarettes to others[5]. Provision of cigarettes by social sources depends on commercial access; strong legislation and retailer compliance limit the ability of adolescents to purchase and provide cigarettes.

To achieve sustained compliance, enforcement of tobacco access laws is essential. Rather than simply educating retailers about youth tobacco access laws, effective enforcement activities include regular compliance checks, warnings, assigning appropriate penalties and mobilising community support[6].

Point of Sale Displays

Retail display of tobacco products has become the most important advertising strategy to the tobacco industry in the wake of restrictions on tobacco promotion. In 2002, $77 million was paid to retailers by tobacco manufacturers to display tobacco products[7] and in 2003, 42% of all Canadian tobacco retailers employed point of sale advertising with counter top displays being the most prominent format (33% of stores)[1]. These are effective advertising tools because they reach the entire population and situate tobacco beside other common products, sending the message to youth that tobacco use is as socially acceptable as candy consumption.

In June 2001, the province of Saskatchewan became the first jurisdiction in Canada to ban the display of tobacco products in places accessible to people under the age of 18. While the legislation received unanimous approval in the Legislature and strong support from the public, the tobacco industry was quick to challenge its constitutionality. The tobacco industry claimed that point of sale displays and advertising have no effect on youth smoking, despite the strong evidence that advertising increases tobacco use[8].

On January 19, 2005 the Supreme Court upheld Saskatchewan's legislation prohibiting the display of tobacco products in any retail premise accessible by minors. Similar legislation has been tabled in other Canadian provinces including Manitoba, Prince Edward Island and Ontario.

Product Regulation

Although approximately one third of smokers (smoked beyond puffing, not daily smokers and daily smokers) claimed they smoked a "light/mild" or "ultra/extra light/mild" brand of cigarettes, evidence of this was not present in corresponding tar values. The majority of students who smoked reported they usually smoked a brand of cigarettes with tar levels greater than 10 mg and over one third reported smoking cigarettes with tar values greater than 15 mg. There is a lack of correspondence between tar delivery and product descriptors; tar delivery is a function of cigarette engineering, while the descriptor is a marketing tool.

The choice of high tar delivery cigarettes by youth who are beginning to smoke is not unusual or surprising. These cigarettes are designed to be easy to use while providing maximum levels of nicotine with minimum effort. Additionally, smokers may increase the delivery of nicotine by increasing the amount of smoke inhaled[9]. For youth who smoke fewer cigarettes, and who are becoming addicted to nicotine, such products are ideal; youth may experiment with their nicotine intake at a minimum cost.

For this group of smokers, and cigarette manufacturers, the engineering of the cigarette and marketing go hand in hand. Internal tobacco industry documents suggest that in addition to advertising and promotional activities targeting youth, cigarettes were designed to be more palatable, easier to smoke, and more addictive[10]. Among those students with a usual brand, approximately half (51%) reported their choice was based on taste. In addition to the possibility of being confused by the descriptor ("regular," "light," or "mild") which is irrelevant to the physiological response, youth are also influenced by taste and other nicotine delivery properties. Consideration of regulation regarding cigarette design is necessary; engineering of cigarettes so they are less palatable and very difficult to smoke, and reducing the amount of available nicotine are key issues to address.

Implications for Education and Message Promotion

Findings of the 2002 YSS provide clear evidence that youth are increasingly reliant on social sources to obtain cigarettes. It is important to recognize, however, that social acquisition and provision of cigarettes are highly related, and depend heavily on a hospitable social environment[5]. There are fewer opportunities for youth to purchase and smoke cigarettes in an environment where smoking is unacceptable. Attempts to modify the social environment include tobacco industry denormalization strategies. Such campaigns can be used to reduce the social acceptability of smoking by highlighting the tobacco industry's manipulative and unethical activities, and their overt attempts to increase the social acceptability of smoking[11]. Promotion and education efforts to reduce youth tobacco access need to address all aspects of the social environment that allow or promote youth tobacco use, including social and retail sources of cigarettes, a lack of smoke-free spaces, and marketing of tobacco and other tobacco industry practices (e.g. disinformation strategies).

Source of Cigarettes

The increasing dependence upon social sources, revealed by the comparison of findings from the 1994 and 2002 YSS, suggest that current enforcement and compliance activities are having an effect. However, one quarter of youth continued to purchase cigarettes from retail sources, indicating a need for implementing strategies that discourage non-compliant retailers from selling cigarettes to youth. To ensure compliance and limit youth purchasing ability, retailers and the general public need to understand both the law restricting sales to minors and the purpose behind the law. Both groups need to be made aware of how the regulations are enforced, and the potential consequences of selling or providing tobacco to underage youth.

Given that the majority of students usually obtained cigarettes through social sources, activities discouraging social sources from supplying cigarettes are also necessary. Education programs are essential that both discourage retailers from selling to youth and discourage adult smokers from providing cigarettes to underage/beginning smokers.

Smoke-Free Spaces

Social exchange of cigarettes among youth is influenced by parental behaviour and community norms about smoking[5]. Strong, comprehensive smoke-free laws covering public places and workplaces can promote cessation among adults, reduce cigarette consumption among those who continue to smoke, and create social norms against smoking. Thus, educational campaigns promoting both the health benefits of smoke free spaces and the potential to reduce youth tobacco consumption are an important strategy for reducing youth access to tobacco.

Restrictions on smoking at work and home are associated with reduced daily smoking rates and increased cessation in adults[12]. As smoking restrictions become more pervasive, smoking is likely to be perceived as more socially unacceptable and inconvenient. Parents who enforce rules restricting smoking in private settings limit opportunities for social exchange of cigarettes by youth, reinforce negative expectations about smoking, and send a clear message to youth regarding the unacceptability of smoking. Evidence suggests when smoking restrictions in public places and at home are enforced, fewer youth begin smoking, and fewer of those who do begin smoking transition from experimentation to advanced smoking[13]. Additionally, public smoking restrictions limit the number of spaces that young people have to smoke, making social acquisition and sharing more difficult.

Tobacco Industry Products

Education campaigns may be used to create public awareness of tobacco industry marketing efforts and increase interest and participation in tobacco control. One example is to alert the public to the fact that tobacco companies are spending increasing sums on point of purchase displays. Effective campaigns will inform smokers there are insignificant differences between most cigarette brands sold in Canada with respect to exposure to carcinogens and toxins, and "light" and "mild" descriptors are nothing more than a marketing strategy of tobacco companies.

Implications for Future Monitoring and Further Research

The 2002 YSS provides useful information regarding youth access to tobacco, but this information is only a fraction of what is needed to monitor youth tobacco use in relation to tobacco access.

Research is necessary to understand effective strategies for decreasing the social availability of cigarettes to youth, and factors influencing sharing behaviours. Between 1994 and 2002, the proportion of students who received cigarettes from friends increased considerably, as did the price of cigarettes. Higher prices can reduce the availability of cigarettes through social sources; fewer young smokers have cigarettes to share and those who have cigarettes may be less willing to give them away because of the higher costs of obtaining them[14]. This relationship creates a need to better understand the reciprocal nature of the social exchange of cigarettes among adolescents. For example, it is unclear how the price of cigarettes contributes to smokers' generosity, and at what price threshold an individual's propensity to give away cigarettes would be limited. Given the current practice of sharing cigarettes, it will be easier to increase retailer compliance with tobacco access laws than it will be to prevent youth from accessing cigarettes through social sources. None-the-less, interventions aimed at diminishing social sources should be explored.

Evaluating the implementation, enforcement, and impact of legislation banning point of sale tobacco displays is necessary to understand the influence of such advertising on youth tobacco access and retailer compliance with youth access restrictions. Additionally such research could provide the support needed to impose similar legislation in other jurisdictions.

There are some limitations to the degree to which the YSS is a good vehicle to study youth tobacco access in Canada. Underage smokers may use multiple sources to obtain cigarettes and may have a variable rate of success when attempting to make purchases. The YSS asked a limited number of questions about attempts to buy cigarettes and may not capture the complexity of this behaviour. The survey instrument may need to be expanded to deal with such issues.

More notably, due to low smoking prevalence and small sample sizes, the ability to compare youth tobacco access across provinces was limited. Tobacco use behaviour is highly influenced by environmental and sociocultural factors. The inability to make comparisons across provinces did not permit the examination of the environmental and social factors affecting tobacco access and smoking behaviours in each province. However, small sample sizes are representative of decreased youth smoking prevalence and the overall success of tobacco control efforts. In the future, provinces may wish to augment the sample in order to fully explore environmental and sociocultural differences.

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Table 9-1
Usual Source of Cigarettes, by Grade, Sex and Category of Smoker, Canada, Youth Smoking Survey 2002

Grade	Pop. Est. ('000)	Where Do You Usually Get Cigarettes? (%)	
		Retail Source	Social Source
Total, 5-9	**116**	**25.2**	**74.8**
Males, 5-9	53	31.6	68.5
Females, 5-9	64	19.9	80.1
Smoked Beyond Puffing, 5-9 (a)	80	18.3	81.7
Daily Smokers, 5-9	36	40.5	59.5

(a) Smoked Beyond Puffing, Not Daily Smokers

Table 9-2a
Usual Place Cigarettes Obtained Among Students who Smoke, by Grade and by Sex, Canada, Youth Smoking Survey 2002**

		Where Do You Usually Get Cigarettes? (%)***					
		Retail Sources		Social Sources			
Grade	Pop. Est. ('000)	Corner Store	Other Store	Buy from Friend/other	Family Gives	Friend Gives	Take from Family
Total, 5-9	**107**	**19.6**	**2.8***	**24.1**	**13.3**	**29.2**	**8.3***
7	23	#	#	24.0*	#	32.6	13.3*
8	34	19.9*	#	27.5	11.5*	27.9	#
9	50	26.3	#	22.9	14.4*	28.2	#
Males, 5-9	**47**	**22.9**	**#**	**24.6**	**8.9***	**24.8**	**10.2***
7	11	#	#	#	#	#	#
8	14	23.7*	#	25.1*	#	22.2*	#
9	22	28.7*	#	21.2*	#	28.4*	#
Females, 5-9	**59**	**17.0**	**#**	**23.7**	**16.9**	**32.7**	**6.8***
7	12	#	#	#	#	43.2*	#
8	19	#	#	29.2*	#	32.2*	#
9	28	24.3*	#	24.2*	17.7*	28.0	#

# Data suppressed due to high sampling variability
* Moderate sampling variability; interpret with caution
** Smoked Beyond Puffing, Not Daily Smokers and Daily Smokers
*** Due to sampling variability, rows may not sum to 100%

Table 9-2b
Usual Place Cigarettes Obtained among Students who Smoke, by Grade, Sex and Category of Smoker, Canada, Youth Smoking Survey 1994

		Where Do You Usually Get Cigarettes? (%)***				
		Retail Sources		Social Sources		
Grade	Pop. Est. ('000)	Corner Store	Other Store	Buy from Friend/other	Family	Friend Gives
Total, 5-9	**294**	**28.6**	**10.8**	**15.5**	**6.0***	**37.3**
Males, 5-9	135	30.8	11.6*	15.9	6.0*	33.7
Females, 5-9	156	26.6	10.1*	15.1	6.0*	40.6
Smoked Beyond Puffing, 5-9(a)	210	22.2	8.3*	15.8	5.1*	46.6
Daily Smokers, 5-9	84	44.5	17.1*	14.6*	8.5*	14.2*

* Moderate sampling variability; interpret with caution
(a) Smoked Beyond Puffing, Not Daily Smokers
*** Due to sampling variability, rows may not sum to 100%

Table 9-3
Usual Place Cigarettes Obtained, by Grade and Category of Smoker, Canada, Youth Smoking Survey 2002

		Where Do You Usually Get Cigarettes? (%)***					
		Retail Sources		Social Sources			
Grade	Pop. Est. ('000)	Corner Store	Other Store	Buy from Friend/Other	Family	Friend Gives	Take from Family
Total, 5-9	**116**	**19.6**	**2.8***	**24.1**	**13.3**	**29.2**	**8.3***
Smoked Beyond Puffing, 5-9 (a)	80	12.9	#	25.2	8.9*	37.3	10.4*
Daily Smokers, 5-9	36	34.6	#	21.7*	23.0	11.0*	#

# Data suppressed due to high sampling variability
* Moderate sampling variability; interpret with caution
*** Due to sampling variability, rows may not sum to 100%
(a) Smoked Beyond Puffing, Not Daily Smokers

Table 9-4
Usual Place Cigarettes Obtained among Students who Smoke, by Province Smokers, Canada, Youth Smoking Survey 2002**

		Where Do You Usually Get Cigarettes? (%)***				
		Retail Sources		Social Sources		
Province	Pop. Est. ('000)	Corner Store	Other Store	Buy from Friend/ other	Family	Friend Gives
Canada, Total	**116**	**19.6**	**2.8**	**24.1**	**13.3**	**29.2**
Newfoundland and Labrador	3	#	#	51.2*	#	#
Prince Edward Island	0.5	#	#	#	#	#
Nova Scotia	5	#	#	#	#	39.6*
New Brunswick	4	#	#	#	#	#
Quebec	56	24.4	#	24.5	18.6	21.5
Ontario	22	#	#	#	#	46.5
Manitoba	5	#	#	#	#	#
Saskatchewan	4	#	#	#	#	#
Alberta	9	#	#	#	#	#
British Columbia	9	#	#	#	#	#

# Data suppressed due to high sampling variability
* Moderate sampling variability; interpret with caution
** Smoked Beyond Puffing, Not Daily Smokers and Daily Smokers
*** Due to sampling variability, rows may not sum to 100%

Table 9-5a
Attempts to Purchase Cigarettes Among Students Who Smoke, by Sex and Grade, Canada, Youth Smoking Survey 2002**

	Asked Age		Asked for ID		Anyone Refused to Sell to You	
Grade	Pop. Est. ('000)	% Yes	Pop. Est. ('000)	% Yes	Pop. Est. ('000)	% Yes
Total, 5-9	**33**	**52.6**	**33**	**44.3**	**32**	**60.8**
Males, 5-9	19	58.8	18	46.4	18	62.4
Females, 5-9	15	44.5	14	41.5*	13	58.6

* Moderate sampling variability; interpret with caution.
** Smoked Beyond Puffing, Not Daily Smokers and Daily Smokers

Table 9-5b
Attempts to Purchase Cigarettes among Students who Smoke, by Sex and Grade, Canada, Youth Smoking Survey 1994**

	Asked Age		Anyone Refused to Sell to You	
Grade	Pop. Est. ('000)	% Yes	Pop. Est. ('000)	% Yes
Total, 5-9	**460**	**48.0**	**413**	**50.6**
5-6	125	39.9	99	37.5
7-9	335	51.1	315	54.7
Males, 5-9	**233**	**47.2**	**210**	**50.1**
5-6	66	41.1	54	43.7
7-9	167	49.7	155	52.4
Females, 5-9	**227**	**48.8**	**204**	**51.1**
5-6	59	38.5	44	29.8*
7-9	168	52.5	159	57.1

# Data suppressed due to high sampling variability
* Moderate sampling variability; interpret with caution
** Smoked Beyond Puffing, Not Daily Smokers and Daily Smokers

Table 9-6
Strategies for Purchasing Cigarettes from Stores by Category of Smoker, by Grade, Sex, and Type of Smoker, Canada, Youth Smoking Survey 2002

		How Do You Go About Buying Cigarettes From a Store?***					
Grade	Pop. Est. ('000)	Don't Buy From Stores	Try to Look Older	Ensure Know Clerk	Do Nothing Special	Ask Older Person	Do Something Else
Total, 5-9	**113**	**53.1**	**5.9***	**10.6**	**18.9**	**11.6**	**3.2***
5-6	8	72.6	#	#	#	#	#
7-9	105	51.6	5.7*	11.3	20.3	11.9	#
Males, 5-9	**51**	**48.5**	**5.8***	**13.8***	**24.4**	**7.7***	#
5-6	4	75.7	#	#	#	#	#
7-9	47	46.4	#	14.4*	26.2	8.0*	#
Females, 5-9	**62**	**56.8**	**6.0***	**8.0***	**14.4***	**14.7**	#
5-6	4	#	#	#	#	#	#
7-9	58	55.8	#	8.7*	48.5	15.0*	#
Smoked Beyond Puffing, 5-9 (a)	**77**	**65.7**	**4.6***	**8.1***	**14.8**	**6.5***	#
5-6	7	77.7	#	#	#	#	#
7-9	70	64.5	#	8.6*	16.2*	6.5*	#
Daily Smokers, 5-9	**36**	**25.8**	#	**16.2***	**27.8**	**22.5***	#
5-6	1	#	#	#	#	#	#
7-9	35	25.6	#	16.7*	28.6	22.6*	#

# Data suppressed due to high sampling variability
* Moderate sampling variability; interpret with caution
(a) Smoked Beyond Puffing, Not Daily Smokers
*** Due to sampling variability, rows may not sum to 100%

Table 9-7
Strategies for Purchasing Cigarettes from Stores Among Students Who Smoke, by Province, Canada, Youth Smoking Survey 2002**

		How Do You Go About Buying Cigarettes From a Store?
	Pop. Est.	Do Not Buy From Stores
Total	**113**	**53.1**
NL	3	58.7
PE	1	#
NS	5	62.9
NB	3	61.4
QC	55	46.1
ON	21	61.2
MB	5	46.2
SK	4	73.4
AB	9	56.8*
BC	8	57.3

Data suppressed due to high sampling variability
* Moderate sampling variability; interpret with caution
** Smoked Beyond Puffing, Not Daily Smokers and Daily Smokers

Table 9-8
Attempts to ask a Stranger to Purchase Cigarettes, All Students by Sex and Grade, Canada, Youth Smoking Survey 2002

		Ever Asked Stranger to Buy
Grade	Pop. Est.	% Yes
Total, 5-9	**1999**	**4.6**
5-6	789	1.3*
7-9	1209	6.8
Males, Total 5-9	**1022**	**4.2**
5-6	402	1.4*
7-9	620	6.0
Females, Total 5-9	**977**	**5.1**
5-6	388	1.2*
7-9	589	7.7

* Moderate sampling variability; interpret with caution

Table 9-9
Attempts to Ask a Stranger to Purchase Cigarettes, by Category of Smoker and Grade, Canada, Youth Smoking Survey 2002

Grade	Pop. Est. ('000)	Ever Asked Stranger to Buy % Yes
Total, 5-9	**1,999**	**4.6**
5-6	789	1.3*
7-9	1209	6.8
Never Smoker who has Never Seriously Thought About Smoking	**1,374**	**0.5***
5-6	660	0.5*
7-9	715	0.4*
Never Smoker who has Seriously Thought About Smoking	**165**	**#**
5-6	56	#
7-9	109	#
Puffer	**206**	**2.3***
5-6	45	#
7-9	161	2.2*
Smoked Beyond Puffing, Not Daily Smoker	**211**	**24.6**
5-6	24	15.9*
7-9	187	25.7
Daily Smoker	**36**	**74.9**
5-6	1	#
7-9	35	76.0

# Data suppressed due to high sampling variability
* Moderate sampling variability; interpret with caution

Table 9-10
Attempts to Ask a Stranger to Purchase Cigarettes, All Students by Province, Canada, Youth Smoking Survey 2002

Province	Total Pop. Est.	Ever Asked Stranger to Buy % Yes
Total	**1,999**	**4.6**
NL	34	4.6
PE	10	3.9*
NS	61	3.8
NB	48	4.9
QC	483	9.8
ON	758	2.6
MB	75	4.5*
SK	66	3.4*
AB	216	2.4*
BC	247	3.3

* Moderate sampling variability; interpret with caution

Table 9-11a
Brand, Strength, and Tar Levels of Cigarettes Usually Smoked, by Grade, Sex and Category of Smoker, Canada, Youth Smoking Survey 2002

	Total Pop. Est.	Usually Smoke Same Brand	Pop. Est.	Strength of Cigarettes			Tar Levels of Cigarettes Smoked***	
Grade				Regular	Light/Mild	Ultra/Extra/Light/Mild	10 to 14	15+
Total, 5-9	**115**	**59.9**	**60**	**65.6**	**27.9**	**6.5***	**63.1**	**33.8**
5-6	9	53.4*	4	#	#	#	50.3*	#
7-9	106	60.4	56	67.0	27.4	5.6*	64.1	33.4
Males, 5-9	**52**	**61.4**	**27**	**64.8**	**27.7***	**#**	**67.1**	**29.2**
5-6	5	57.1*	2	#	#	#	#	#
7-9	48	62.5	24	65.5	29.4*	#	69.9	27.7*
Females, 5-9	**63**	**58.7**	**33**	**66.2**	**28.0**	**#**	**59.9**	**37.6**
5-6	4	#	2	#	#	#	#	#
7-9	59	61.6	31	68.2	25.9	#	59.6	37.8
Smoked Beyond Puffing, 5-9 (a)	**80**	**53.9**	**37**	**63.9**	**26.8**	**9.3***	**64.07**	**31.2**
5-6	8	49.4*	3	#	#	#	51.5*	#
7-9	72	54.4	34	65.8	25.9	8.3*	65.3	30.7
Daily Smoker, 5-9	**35**	**73.7**	**23**	**68.5**	**29.6***	**#**	**61.6**	**38.1**
5-6	1	83.1	1	#	#	#	#	#
7-9	34	73.5	22	68.9	29.8*	#	62.2	37.5

# Data suppressed due to high sampling variability
* Moderate sampling variability; interpret with caution
*** Due to sampling variability, rows may not sum to 100%
(a) Smoked Beyond Puffing, Not Daily Smokers

Table 9-11b
Students* With a Usual Brand, by Sex and Grade, Canada, Youth Smoking Survey 1994

Grade	Pop. Est. ('000)	Usually smoke same brand
Total, 5-9	302	80.9
5-6	37	84.9
7-9	265	80.4
Males 5-9	142	82.4
5-6	24	89.1
7-9	118	81
Females 5-9	160	79.6
5-6	13	77.1
7-9	147	79.9

* Smoked Beyond Puffing, Not Daily Smokers and Daily Smokers

Table 9-12
Brand, Strength, and Tar Levels of Cigarettes Usually Smoked, by Province, Canada, Youth Smoking Survey 2002**

	Pop. Est.	Usually Smoke Same Brand	Total Pop. Est.	Strength of Cigarettes			Tar Levels of Cigarettes Smoked***	
Province				Regular	Light/Mild	Ultra/Extra/Light/Mild	10 to 14	15+
Total	**115**	**59.9**	**60**	**65.6**	**27.9**	**6.5***	**63.1**	**33.8**
NL	3	66.5	2	60.1	37.1*	#	64.0	#
PE	0.5	63.8	0.5	#	#	#	#	#
NS	5	58	2	#	60.1	#	#	#
NB	4	61.6	2	#	#	#	73.9	#
QC	54	57.4	26	71.8	25.1*	#	66.0	34.0
ON	23	53.6	11	#	#	#	#	#
MB	4	76.1	3	#	#	#	41.1*	58.9
SK	4	56.7	2	#	#	#	70.0	#
AB	9	68	5	#	#	#	#	#
BC	8	75.8	6	#	#	#	#	#

# Data suppressed due to high sampling variability
* Moderate sampling variability; interpret with caution
** Smoked Beyond Puffing, Not Daily Smoker and Daily Smoker
*** Due to sampling variability, rows may not sum to 100%

Table 9-13a
Reasons for Smoking Certain Brands Among Smokers With a Usual Brand, by Sex, Grade, and Category of Smoker, Canada, Youth Smoking Survey 2002

Grade	Pop . Est.	Friends Smoke Same Brand	Parents Smoke Same Brand	Costs Less	Taste	Only Ones Available	Buzz	Other
Total, 5-9	**65**	**24.4**	**14.7**	**8.2***	**51.8**	**10.7***	**7.3***	**12.9***
5-6	4	#	#	#	#	#	#	#
7-9	61	23.5	13.9*	8.4*	52.7	9.9*	7.3*	12.7*
Males, 5-9	**31**	**21.5***	**12.0***	**#**	**52.2**	**11.9***	**9.4***	**11.5***
5-6	2	#	#	#	#	#	#	#
7-9	28	21.9*	9.7*	#	53.5	10.1*	10.1*	11.4*
Females, 5-9	**35**	**27.0**	**17.1***	**#**	**51.5**	**9.6***	**#**	**14.1***
5-6	2	#	#	#	#	#	#	#
7-9	32	24.9	17.5*	#	52.0	9.7*	#	13.8*
Smoked Beyond Puffing, 5-9 (a)	**41**	**31.9**	**19.0 ***	**7.4***	**42.0**	**13.6 ***	**7.5***	**14.2 ***
5-6	3	#	#	#	#	#	#	#
7-9	38	30.9	18.3 *	7.4 *	43.1	12.9*	7.4*	14.2*
Daily Smoker, 5-9	**25**	**12.1***	**#**	**9.5***	**68.1**	**#**	**#**	**10.7***
5-6	1	#	#	#	#	#	#	#
7-9	23	12.0*	#	#	67.8	#	#	10.3*

# Data suppressed due to high sampling variability
* Moderate sampling variability; interpret with caution
(a) Smoked Beyond Puffing, Not Daily Smokers

Table 9-13b
Reasons for Smoking Certain Brands Among Smokers With a Usual Brand, by Grade and Sex, Canada, Youth Smoking Survey 1994**

Grade	Pop. Est.	Friends Smoke Same Brand	Parents Smoke Same Brand	Taste	Only Ones Available	Less Tar/Nicotine	Other
Total, 5-9	**242**	**19.6**	**11.6**	**62.3**	**10.2**	**8.8***	**9.5**
5-6	31	21.3*	25.5*	39.1*	22.0*	#	#
7-9	211	19.3	9.6*	65.7	8.4*	7.8*	9.4*
Males, 5-9	**115**	**18.9**	**10.9***	**62.4**	**11.4****	**9.5***	**9.8***
5-6	21	#	#	43.4*	#	#	#
7-9	95	18.7*	8.2*	66.6	8.4*	6.9*	9.8*
Females, 5-9	**126**	**20.2**	**12.3***	**62.2**	**9.0***	**8.2***	**9.1***
5-6	10	#	#	#	#	#	#
7-9	117	19.8	10.8*	64.9	8.5*	#	8.9*

# Data suppressed due to high sampling variability
* Moderate sampling variability; interpret with caution
** Smoked Beyond Puffing, Not Daily Smokers and Daily Smokers

Table 9-14a
Brand Switching Among Smokers With a Usual Brand, by Sex, Grade, and Category of Smoker, Canada, Youth Smoking Survey 2002

	Switch in Past Year (2002)	
	Pop. Est.	% Yes
Total, 5-9	**66**	**38.6**
5-6	4	#
7-9	62	38.5
Males, 5-9	**30**	**34.4**
5-6	2	#
7-9	28	34.5
Females, 5-9	**36**	**42.3**
5-6	2	#
7-9	34	41.9
Smoked Beyond Puffing, 5-9 (a)	**41**	**35.5**
5-6	4	#
7-9	38	35.4
Daily Smoker, 5-9	**25**	**43.9**
5-6	1	#
7-9	24	43.5

# Data suppressed due to high sampling variability
* Moderate sampling variability; interpret with caution
- Data not available
(a) Smoked Beyond Puffing, Not Daily Smokers

Table 9-14b
Brand Switching Among Smokers with a Usual Brand, by Sex, Grade, and Category of Smoker, Canada, Youth Smoking Survey 1994

	Switch in Past Year (1994)	
	Pop. Est.	% Yes
Total, 5-9	**237**	**41.7**
5-6	30	27.8*
7-9	207	43.4
Males, 5-9	**113**	**43.0**
5-6	20	29.1*
7-9	93	44.9
Females, 5-9	**124**	**40.4**
5-6	10	#
7-9	114	42.0
Smoked Beyond Puffing, 5-9 (a)	**164**	**35.6**
5-6	28	26.9*
7-9	133	37.0
Daily Smoker, 5-9	**209**	**54.2**
5-6	2	-
7-9	207	54.9

# Data suppressed due to high sampling variability
* Moderate sampling variability; interpret with caution
- Data not available
(a) Smoked Beyond Puffing, Not Daily Smokers

CHAPTER 10 - KNOWLEDGE OF RESTRICTIONS ON SALES TO MINORS AND SMOKING IN SCHOOLS

Ana Florescu, BSc
Public Health Sciences
University of Toronto

Roberta Ferrence, PhD
Ontario Tobacco Research Unit, &
Department of Public Health Sciences
University of Toronto

Judy Snider, MSc
Tobacco Control Programme
Health Canada

Scott T. Leatherdale, PhD
Division of Preventive Oncology
Cancer Care Ontario,
Department of Health Studies and Gerontology
University of Waterloo, &
Department of Public Health Sciences
University of Toronto

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HIGHLIGHTS

- 72% of Canadian youth surveyed knew the legal purchase age for cigarettes in their province. Daily smokers were most likely to know the legal purchase age (91%). Knowledge increased with grade and varied by province. Females were more likely than males to report the correct purchase age.
- Most students reported at least some smoking restrictions in their school, and 62% reported a full ban on smoking. There was considerable provincial variation in reports of full bans, and students in lower grades were more likely than those in higher grades to report such bans. Daily smokers were most likely to report that there were no smoking restrictions at their school.
- More than half of those who smoked in the last 30 days (57%) reported that school smoking restrictions had no impact on their smoking.
- Students who smoked in the last 30 days and reported that their school had a full ban smoked fewer cigarettes per day (2.6 cigarettes/day) than those who reported lesser (5.2 cigarettes/day) or no restrictions (5.9 cigarettes/day).
- While cigarette consumption was generally higher on Friday and Saturday than during the week, students who smoked in the last 30 days and attended schools with a full ban smoked fewer cigarettes per day every day of the week than those attending schools with lesser or no restrictions.
- Students were more likely to report that their school had a full ban on smoking in the 2002 YSS than in the 1994 YSS (62% and 37%, respectively), and fewer reported that their school had no smoking restrictions (6% and 25%, respectively)
- Students were less likely to report general compliance with school smoking rules in the 2002 YSS than were students in the 1994 YSS (38% and 58%, respectively)
- In the 2002 YSS, those who smoked in the last 30 days were more likely to report that school rules reduced the amount they smoked at school than were similar smokers in the 1994 YSS (19% and 12%, respectively)
- Compared to similar students in the 1994 YSS, students in the 2002 YSS who smoked in the last 30 days and who attended schools with no rules smoked more, but students in schools with a full ban smoked less.

METHODS

This section covers definitions and sample issues specific to this chapter. For detailed methods on the entire 2002 Youth Smoking Survey refer to Chapter 2.

Definitions

This chapter examined the relationship between knowledge of legal purchase age, school smoking restrictions and patterns of smoking among students in grades 5-9 in the 2002 Youth Smoking Survey (YSS). Variables of interest include: students' knowledge of the legal purchase[*] age for cigarettes in their province; students' reports of smoking rules in their school; their perceptions of general compliance with these rules; and smokers' perceptions of the impact of smoking restrictions on their smoking. These variables are examined in relation to category of smoking and number of cigarettes smoked per day.

The definitions used to categorize smoking behaviour have been described earlier (Chapter 2, see especially Table 2-C and Chapter 3). The analyses were carried out using the five point derived variable (Never Smoker who has Never Seriously Thought About Smoking; Never Smoker who has Seriously Thought About Smoking; Puffer; Smoked Beyond Puffing, Not Daily Smoker; and Daily Smoker*)*.

To measure knowledge of legal purchase age for cigarettes, respondents were asked to report how old a person would have to be to buy cigarettes according to the law in their province, (Y_Q49). These responses were used to construct a new variable (dvlegal), which reclassified responses as correct or incorrect using the actual legal purchase age for each province (Table 10-1). For this variable, "Don't know" responses were treated as missing, while for all other variables, "Don't know" was a valid response.

Respondents were asked what types of rules about smoking there were in their school (Y_Q55). For the 1994 YSS data, these responses were derived from two separate questions (Q66P56: "Any school rules regarding smoking areas" and Q65P57: "The school rules regarding smoking areas are: Smoking allowed only in some areas (*Partial ban*); Smoking is not allowed anywhere on school property (*Full ban*); Don't know"). Students were also asked if most students obeyed that rule (Y_Q56 in 2002 and Q68P59 in 1994). Knowledge of school rules was also analyzed according to whether the students reported being taught about the health effects of tobacco (Y_Q58).

It is important to note that these data are based on students' perceptions of school rules and smokers' compliance with them. They may in fact more realistically reflect the combination of rules, enforcement and compliance that exist in their schools.

Students who smoked in the last 30 days and reported a school rule regarding smoking were asked how the rule affected their smoking (Y_Q57in 2002 and Q67P58 in 1994): 1) Because of that rule I don't smoke at school; 2) Because of that rule I smoke less at school; 3) It does not make any difference - I smoke at school as much as I want; 4) It does not make any difference - I wouldn't smoke at school anyway; 5) Other. To facilitate comparison with the 1994 data, response categories 3 and 4 were combined and labeled "It has made no difference."

---

[*] Although the *Tobacco Act* prohibits tobacco products from being furnished to a young person in a public place or in a place to which the public reasonably has access, the questionnaire asked about the legal age to buy cigarettes (purchase). Therefore, the term 'the legal purchase age' will be used throughout the 2002 YSS Technical Report.

Mean number of cigarettes smoked per day was calculated (DVAMTSMK) for those respondents who smoked in the last 30 days. This variable was derived from responses Y_Q21MON to Y_Q21SUN. Weekly smoking was also calculated based on the same question (Y_Q21MON to Y_Q21SUN).

All variables were examined by grade, sex, province, household income and parental education.

Sample and Response

Missing data for items discussed in this chapter accounted for less than 10% of the total responses. As such, the data presented are based on those for whom complete data were available. According to Statistics Canada guidelines, data are not reportable if the sample size is too small or if there is high sampling variability. Statistically significant group differences were determined using procedures described in Chapter 2.

FINDINGS

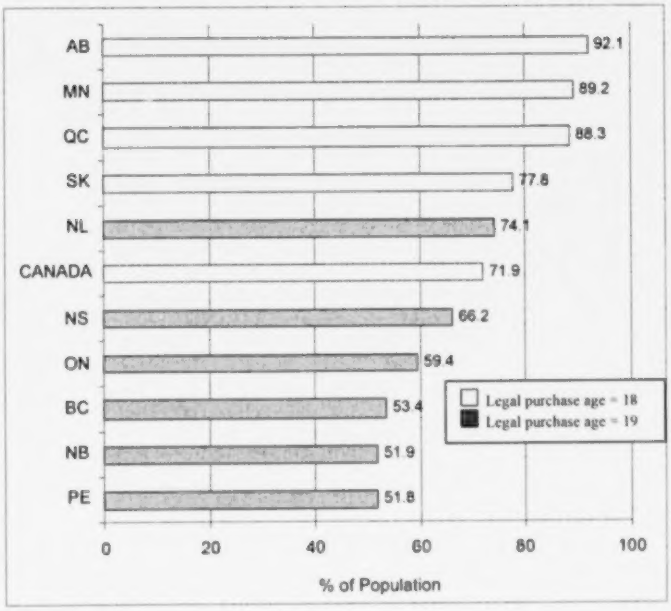
Knowledge of Legal Purchase Age

In the 2002 YSS, the majority of youth (72%) correctly identified the legal purchase age for tobacco in their province (Table 10-2a). Daily smokers were more likely to report the correct legal purchase age (91%) than other categories of smokers (68% for never smokers who have never seriously thought about smoking; 72% for never smokers who have seriously thought about smoking; 79% for puffers; 82% for smoked beyond puffing, not daily smokers). Youth in higher grades were more knowledgeable than those in lower grades (76% in grades 7-9 compared to 65% in grades 5-6). Females were more likely than males to report the correct legal purchase age (74% and 70%, respectively). Similar patterns were found in the 1994 YSS (Table 10-2b). Overall, the mean percent of students in grades 5 to 9 with knowledge of the legal purchase age was unchanged from the findings in the 1994 YSS.

Knowledge of the correct legal purchase age ranged from 52% in Prince Edward Island to 92% in Alberta (Table 10-3a, Figure 10-A). Students in provinces where the legal purchase age is 18 were more likely to report the correct age than those in provinces where the purchase age is 19. Knowledge did not vary by perceived academic performance, household income, or parental education (data not shown).

While the overall mean percent of students in grades 5 to 9 with knowledge of the legal purchase age did not change from 1994 (Table 10-2b) to 2002 (Table 10-3b), this masked increases in seven of 10 provinces. The exceptions were Prince Edward Island and Ontario, where knowledge decreased, and Manitoba where the knowledge level remained unchanged.

Figure 10-A
Knowledge of Legal Purchase Age for Cigarettes, by Province and Actual Purchase Age, Grades 5-9, Canada, Youth Smoking Survey 2002



Reported School Smoking Restrictions

More than three quarters of all students in the 2002 YSS reported some school restrictions on smoking: 62% reported a full ban; 16% reported a partial ban; 6% reported no rules; and 16% did not know of any rules (Table 10-4a). Lack of knowledge of school rules decreased among students in higher grades, from 22% of grade 5 students to 10% of grade 9 students. Males were more likely than females to report no rules (8% and 5%, respectively). No other sex differences in reported school rules were evident.

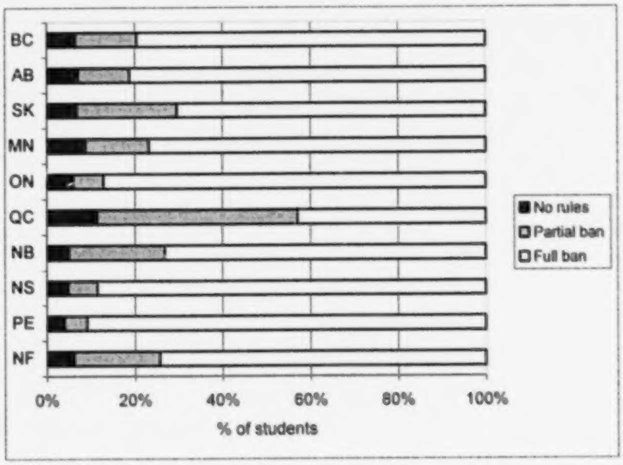
In the higher grades, students were more likely to report a partial ban (25% of grades 7-9 compared to 3% of grades 5-6). A smaller proportion of students in the 2002 YSS (Table 10-4a) reported no rules, compared to students in the 1994

YSS (6% and 25%, respectively); fewer reported a partial ban (16% and 21%, respectively); and more reported a full ban (62% and 37% respectively). In the 2002 YSS, daily smokers were more likely to report no rules than never smokers who have not seriously thought of smoking (Table 10-5a). The latter were most likely to report a full ban (66%) compared to puffers (55%), smoked beyond puffing, not daily smokers (48%) and daily smokers (27%). Compared to findings in the 1994 YSS (Table 10-5b), a significantly smaller proportion of all students except daily smokers, reported no rules. Similarly, a significantly higher proportion of all respondents except daily smokers reported full bans.

Full school bans on smoking were reported most often in Prince Edward Island (81%) and least often in Quebec (37%) (Table 10-6a; Figure 10-B). In the 2002 YSS, students in all provinces reported a higher proportion of full bans, compared to students in the 1994 YSS (10-6b). The province with the greatest increase in students' reports of full bans was Quebec (14% and 37%, respectively). There was no variation in reported rules by perceived academic performance, household income, or parental education (data not shown).

In the 2002 YSS, students who reported being taught in school about the health effects of smoking were more likely to report a full ban at their school (64%) than those who reported receiving no such education (53%) (Table 10-7a). They were also less likely to report no rules (5%) than the students who received no health effects information (12%). Compared to finding in the 1994 YSS (Table10-7b), fewer students reported no rules, regardless of whether they were taught about health effects of smoking, and more students reported a full ban.

Figure 10-B
Reported School Smoking Restrictions, by Type of Restriction and Province, Grades 5-9, Canada, Youth Smoking Survey 2002



Perception that Smokers Comply with School Rules

In the 2002 YSS, 38% of students who reported any rules about smoking in their school indicated that the rule is usually obeyed by smokers (Table 10-8a). When analyzed by smoking behaviour, 60% of daily smokers agreed that smokers obeyed the rules, compared to 35% of never smokers who have never seriously thought of smoking. Older students reported higher perceived compliance than younger students, 42% in grades 7-9 compared to 32% in grades 5-6. No differences were noted between the sexes. Reported perceived adherence to the rules declined significantly between the 1994 (Table-8b) and 2002 YSS (58% and 38%, respectively).

Impact of School Smoking Restrictions on Smoking

In the 2002 YSS, more than two-fifths (43%) of those who smoked in the 30 days prior to the survey reported that school rules had some impact on their smoking (Table 10-9a): 24% said they did not smoke at school and 19% said they smoked less at school because of the rule. There were no sex differences. Comparisons between grades were not possible due to low numbers of respondents in grades 5-6 who smoked in the last 30 days. The percentage of these students who reported no impact of rules on smoking increased compared to the finding in the 1994 YSS (Table10-9b). This may be a function of the 2002 response category, which included "I smoke at school all I want" and "I wouldn't smoke at school anyway". The percentage of these students reporting that they smoke less due to school rules (19%), increased compared to that (12%) in the 1994 YSS.

Among students who smoked in the last 30 days in the 2002 YSS, those who reported a full ban on smoking in their school were more likely to report some difference in smoking behaviour in response to the rule compared to those who reported a partial ban (56% and 31%, respectively) (Table 10-10a).

Number of Cigarettes Smoked

In the 2002 YSS, number of cigarettes smoked was related to reports of school rules. On average, students in grades 5-9 who reported smoking in the last 30 days and who also reported no rules at school smoked 5.9 cigarettes per day (Table 10-11a); those who reported a partial ban smoked an average of 5.2 cigarettes per day, and those who reported a full ban smoked half as many cigarettes per day (2.6). No sex differences were found in this pattern. Comparisons by grade were not possible due to low sample size in grades 5-6.

The number of cigarettes smoked per day increased among students reporting no rules from 4.6 in the 1994 YSS (Table 10-11b) to 5.9 in the 2002 YSS (Tables 10-11a).

Smoking Patterns

In the 2002 YSS, the number of cigarettes smoked per day by students in grades 5 -9 who smoked in the last 30 days was higher during the weekend (on Friday and Saturday), regardless of school rules (Table 10-12a). Among students in grades 7-9, those who reported a full ban smoked fewer cigarettes per day on all days of the week compared to those reporting no restrictions (Figure 10-C). Similar patterns were observed in the 1994 YSS (Figure 10-D).

Figure 10-C
Weekly Smoking Pattern, by School Smoking Restrictions, Last 30 days Smokers, Grades 7-9, Canada, Youth Smoking Survey 2002

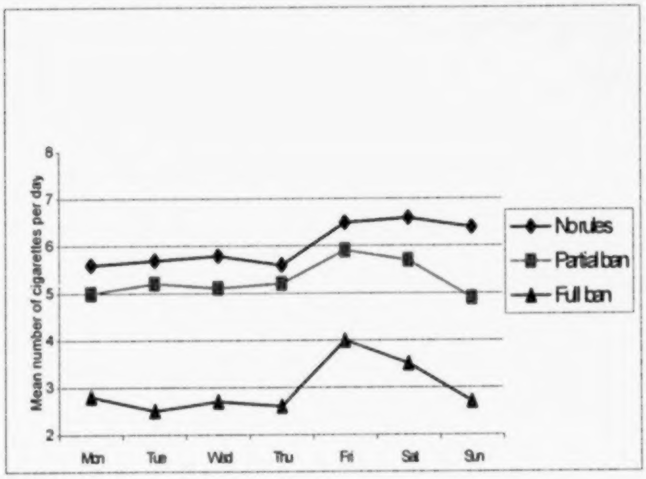
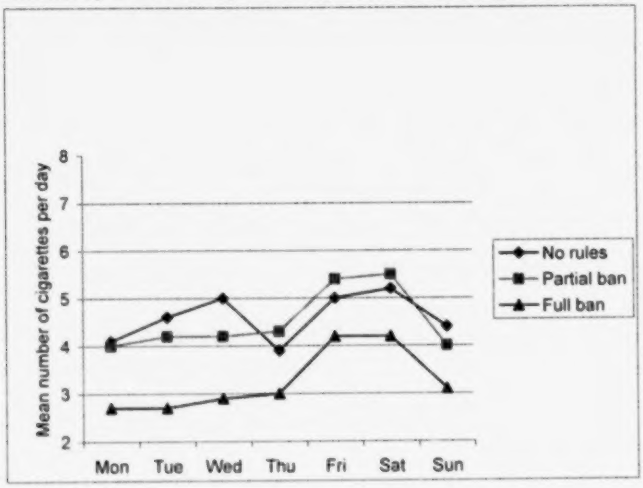
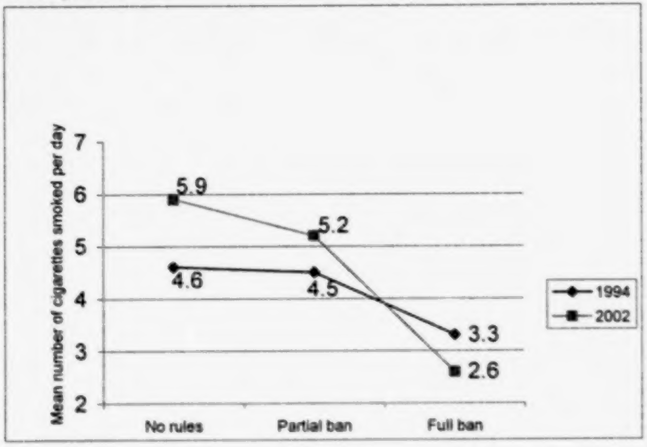


Figure 10-D
Weekly Smoking Pattern, by School Smoking Restrictions, Last 30 days
Smokers, Grades 7-9, Canada, Youth Smoking Survey 1994



Compared to findings in the 1994 YSS, smokers in grades 7-9 in the 2002 YSS, who reported no rules or a partial ban, consumed a greater number of cigarettes per day (Figure 10-E).

Figure 10-E
Mean Number of Cigarettes Smoked per day by Reported School Smoking Restrictions, Last 30 days Smokers in Grades 7-9, Canada, Youth Smoking Survey 2002



In the 2002 YSS, the ratio of weekend to weekday smoking was highest among schools with a full ban (Table 10-A).

Table 10-A
Weekend to Weekday Ratio of Daily Cigarette Consumption, Grades 5-9, Canada, Youth Smoking Survey 2002

Type of Rules	Cigarette Consumption Averaged Sun-Thur	Cigarette Consumption Averaged Fri-Sat	Ratio Weekend/Weekday
No Rules	5.8	6.6	1.1
Partial Ban	5.1	5.8	1.1
Full Ban	2.7	3.8	1.4

DISCUSSION

The results of the 2002 YSS indicate that smoking restrictions in schools are associated with reduced student smoking. However, studies indicate that school smoking restrictions are not sufficient on their own to reduce the youth smoking rate[1-4]. Rather, the impact on smoking behaviours occurs when bans are enforced or when they are part of a comprehensive program that includes education/counseling and enforcement of school restrictions with disciplinary measures. Such a multifaceted approach not only regulates smoking on school property, it seeks to change the social norms of smoking[5].

Legal Purchase Age

As was the case in the 1994 YSS, most Canadian youth surveyed in 2002 knew the legal purchase age to buy cigarettes. Many factors may be responsible for this high awareness including the enforcement of the Tobacco Act (1997), which requires retailers to post signs stating the legal age for selling tobacco and to request identification from anyone attempting to buy tobacco products who appears to be under the legal age. Some studies have demonstrated that the legislation regarding legal purchase age does decrease access to minors from commercial sources, but the evidence for its effectiveness is inconclusive[6]. Chapter 9 addresses youth access to tobacco industry products in detail.

School Smoking Restrictions

More than three quarters of students in the 2002 YSS reported some kind of school smoking restrictions, and 62% reported a full ban. This supports the information collected in a 1995 survey of elementary and secondary schools, where 97% of schools reported having some type of tobacco control policy which applied to all persons on school grounds[7]. At that time, two thirds of school policies banned smoking at all times both indoors and outdoors on school property.

Acknowledging that these rules have been in place for many years, it is worth noting that 1 in 6 students reported not knowing whether there were any rules at their school. It is possible that students are not aware of restrictions because they are ignored or because students see people smoking directly off school property instead of on school property. Again, having smoking restrictions in place may not be sufficient to ensure that the students are aware of them without a supporting comprehensive tobacco control strategy, which should include education, counseling, cessation programs, advocacy and disciplinary measures.

Provincial variations in the knowledge of school rules may reflect the mosaic of school smoking policies. In 1995, province-wide legislation existed in four provinces with varying levels of restrictions. Ontario was the first province with a legislated full ban, Manitoba, Prince Edward Island and Quebec had partial bans.

Schools in the rest of the country either relied on school board mandated policies or were developed them on their own[7].

In the 2002 YSS, evidence that school smoking restrictions are having an impact is found in the differing patterns of smoking and the mean number of cigarettes smoked per day according to the completeness of bans. Students who reported full bans smoked fewer cigarettes per day than students who reported partial bans or no rules, and they smoked less on all days of the week compared to students in schools with no rules. It is possible that the smokers in schools with full bans were different in other ways that were not examined and that these unexamined differences might account for their different smoking patterns.

Implications for Regulation and Legislation

Schools across Canada should have a common set of smoking regulations, and these regulations should be enforced. Regardless of the educational institution, youth should not be exposed to second-hand smoke either indoors or outdoors. Further, the school environment should support non-smoking as normative behaviour. Implementing full smoking restrictions in schools is not sufficient to reduce youth smoking rates. Enforcement of these rules also needs to be evenly applied to students, teachers, administrative staff and visitors. In 1995,15% of schools with smoking policies had no enforcement procedures, and others applied them unevenly, with some students receiving detentions and others only being asked to stop smoking or to leave the school grounds[7]. Regulations regarding where people can smoke fall under provincial jurisdiction and are not covered under the *Tobacco Act*.

Evidence suggests that restrictions on smoking in other public areas, in addition to school bans, have the potential to reduce the prevalence of smoking among youth, and uptake of this behaviour. Restrictions on smoking at work and home have been associated with reduced daily smoking and increased cessation in adults[8]. Smoking is likely to be regarded as socially unacceptable by youth if restrictions become more pervasive. When smoking restrictions in public places and at home are enforced, fewer youth begin smoking, and fewer of those who begin smoking advance from experimentation to active smoking[9].

Two provinces (Alberta and Nova Scotia) have laws that restrict minors from possessing tobacco products. The enforcement of these laws provides for the youth to be fined or the products to be confiscated. However, the level of enforcement of these laws is unknown. It is possible that the perceived increase risk of police charges or fines may deter youth from smoking.

Currently, the promotion of tobacco products in Canada occurs mainly through tobacco displays in the retail environment. Eliminating these retail displays would limit the visibility of the product to all Canadians, including youth.

Given that the majority of youth in grades 5-9 access tobacco from social sources, regulations to limit such access would be difficult to develop or apply. This may require more of an educational messaging process whereby friends, siblings and adults are informed of the importance of not providing tobacco products to minors.

Implications for Education and Message Promotion

A comprehensive tobacco control program in the school environment that includes clear messaging and other tobacco control strategies, along with restrictions on smoking, has more potential to impact smoking among school-aged children than school restrictions on their own. It is equally important that the community environment supports and reinforces schools in their efforts to make the school environment smoke-free. Community messages should be consistent with school messages about smoke-free environments, and should encourage and support smoking restrictions in a variety of locations, including personal spaces, such as homes and cars.

Grade-specific tobacco control information has been developed for use in schools to teach students about the harms associated with tobacco product use (Chapter 8). This may not be sufficient, given the proportion of students who did not report having received this information. Comprehensive tobacco control programs in schools provide a broader spectrum of activities, which involve youth and include advocacy and peer counseling. Many of the tools needed to implement these types of programs are available on websites such as Health Canada's www.gosmokefree.ca

Implications for Future Monitoring and Further Research

Information on youth smoking and the factors that influence it must continue to be gathered in regular surveys. With regard to restrictions on smoking in schools, additional information on existing school smoking rules, their enforcement and the associated penalties is needed to provide further insight into the impact of these activities, above and beyond what is possible with the data in the 2002 YSS. The collection of information from administrators in schools where the survey was conducted would allow investigators to examine the reliability of the students' self-reports on school rules and other associated variables. School data and the subsequent analysis might also provide insight into the differences in provincial smoking behaviours.

Finally, schools should be viewed as one element in a young person's environment that potentially affects their smoking behaviour. Information is needed to investigate the interaction of school variables with a host of other community, provincial and national factors that influence youth smoking patterns. Data on venues outside of school properties where youth are smoking may assist in untangling the issues surrounding the reported patterns of heavier smoking on Fridays and Saturdays. These nights are traditionally seen as social opportunities to smoke, as youth are not as restricted as they are on school nights. Better data on venues where students smoke on these occasions may provide information that prevention and cessation programs could use to develop effective messages targeted at this behaviour.

Limitations

YSS is a cross-sectional survey and the limitations associated with this type of survey apply to this one as well. These limitations include the timing of many of the behaviours and indicators measured, and the potential for some recall bias associated with self-reporting. The analyses of some of the variables of interest were limited by the universe imposed (smoked within the last 30 days) and the low prevalence of behaviours.

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Table 10-1
Legal Purchase Age for Cigarettes by Province, Canada, 2002 and 1994

Province	Legal Purchase Age (2002)	Legal Purchase Age (1994)
NL	19	19
PE	19	18
NS	19	19
NB	19	19
QC	18	18
ON	19	19
MB	18	18
SK	18	18
AB	18	18
BC	19	19

Table 10-2a
Knowledge of Legal Purchase Age for Cigarettes, by Smoking Category, Grade and Sex, Canada, Youth Smoking Survey 2002

Grade/Sex	Pop Est ('000)	Total	Never Smoker (a)	Never Smoker (b)	Puffer	Smoked Beyond Puffing (c)	Daily Smoker
Total, 5-9	**1,542**	**71.9**	**68.1**	**71.9**	**79.1**	**81.7**	**90.5**
5-6	582	65.4	64.1	64.5	74.1	80.1	94.1
7-9	964	75.9	71.7	75.7	80.4	81.8	90.4
5	280	63.0	62.0	63.5	72.3	66.6	96.2
6	302	67.7	66.1	65.5	75.5	84.6	91.8*
7	323	75.0	71.5	83.1	78.8	83.5	88.2
8	321	73.1	70.4	64.1	78.7	78.8	86.2
9	320	79.4	73.6	81.1	83.0	83.4	93.3
Males, 5-9	794	70.4	66.5	73.9	78.1	78.6	87.0
Females, 5-9	553	73.5	69.8	69.8	80.3	84.5	93.8

(a) Never Smoker who has Never Seriously Thought About Smoking
(b) Never Smoker who has Seriously Thought About Smoking
(c) Smoked Beyond Puffing, Not Daily Smoker
* Moderate sampling variability; interpret with caution

Table 10-2b
Knowledge of Legal Purchase Age for Cigarettes, by Smoking Category, *Grade and Sex*, Canada, Youth Smoking Survey 1994

Grade/Sex	Pop Est ('000)	Total	Never Smoker (a)	Never Smoker (b)	Puffer	Smoked Beyond Puffing (c)	Daily Smoker
Total 5-9	**1,464**	**73.0**	**71.0**	**73.0**	**73.0**	**74.4**	**83.4**
5-6	531	68.7	69.4	71.5	67.7	63.6	87.3*
7-9	937	75.4	72.8	73.9	75.8	76.5	83.2
5	223	67.0	67.2	73.6	66.7	60.0	#
6	308	70.0	71.3	70.1	68.2	64.9	91.2
7	300	70.6	71.7	65.5	72.4	69.3	74.9
8	309	77.4	73.8	78.0	78.2	77.2	88.9
9	328	77.8	73.2	78.8	76.6	80.3	81.6
Males 5-9	747	70.7	69.8	66.7	69.5	71.7	84.6
Females 5-9	721	75.4	72.3	78.3	77.2	77.1	82.4

(a) Never Smoker who has Never Seriously Thought About Smoking
(b) Never Smoker who has Seriously Thought About Smoking
(c) Smoked Beyond Puffing, Not Daily Smoker
* Moderate sampling variability; interpret with caution
# Data suppressed due to high sampling variability

Table 10-3a
Knowledge of Legal Purchase Age by Smoking Category and Province, Canada, Youth Smoking Survey 2002

Province	Pop Est (000's)	Total	Never Smoker (a)	Never Smoker (b)	Puffer	Smoked Beyond Puffing (c)	Daily Smoker
NL	26	74.1	69.3	70.4	81.4	85.5	88.8
PE	7	51.8	49.8	46.2*	63.2	62.0	66.7*
NS	43	66.2	63.2	63.5	66.0	75.5	92.9
NB	35	51.9	48.4	49.6	51.6	62.0	81.2
QC	418	88.3	87.7	86.8	89.1	88.3	93.6
ON	580	59.4	56.0	62.0	70.4	70.2	73.6*
MB	56	89.2	89.6	80.6	88.9	94.2	86.1
SK	47	77.8	75.0	86.6	84.4	76.9	85.8
AB	166	92.1	91.5	91.7	90.8	96.7	100.0
BC	168	53.4	48.9	57.3	62.7	73.2	83.7

(a) Never Smoker who has Never Seriously Thought About Smoking
(b) Never Smoker who has Seriously Thought About Smoking
(c) Smoked Beyond Puffing, Not Daily Smoker
* Moderate sampling variability; interpret with caution

Table 10-3b
Knowledge of Legal Purchase Age by Smoking Category and Province, Canada, Youth Smoking Survey 1994

Province	Pop Est (000's)	Total	Never Smoker (a)	Never Smoker (b)	Puffer	Smoked Beyond Puffing (c)	Daily Smoker
NL	36	61.9	53.7	57.1	61.4	67.5	93.9
PE	7	69.9	67.9	63.4	62.9	77.6	88.1
NS	45	54.5	50.1	48.2	58.8	57.6	78.2
NB	38	39.5	33.4	36.2	36.6	49.0	67.4
QC	384	70.2	70.8	63.4	69.1	67.9	82.6
ON	519	88.0	86.0	89.5	87.1	91.6	92.2
MB	56	85.7	85.4	81.8	86.1	85.6	92.6
SK	53	68.6	65.5	71.1	68.8	70.5	76.7
AB	159	72.8	71.6	74.4	71.0	73.9	87.8
BC	171	45.7	37.4	47.4	45.2	53.8	69.7

(a) Never Smoker who has Never Seriously Thought About Smoking
(b) Never Smoker who has Seriously Thought About Smoking
(c) Smoked Beyond Puffing, Not Daily Smoker

Table 10-4a
Reported School Smoking Restrictions by Sex and Grade, Canada, Youth Smoking Survey 2002

Grade/Sex	Pop. Est (000's)	No Rules	Partial Ban	Full Ban	Don't Know
Total 5-9	**2,005**	**6.4**	**16.2**	**61.6**	**15.8**
5-6	788	8.3	2.6*	68.7	20.4
7-9	1217	5.3	25.0	56.9	12.9
5	388	7.8	3.1	66.8	22.3
6	400	8.8	2.0*	70.6	18.6
7	420	7.6	17.7	56.7	18.0
8	403	4.4	20.2	64.5	10.9
9	394	3.6	37.5	49.4	9.5
Males	**1,028**	**8.0**	**16.3**	**60.5**	**15.2**
5-6	402	10.0	2.7	68.8	18.5
7-9	626	6.8	25.0	55.2	13.0
5	197	9.2	3.6*	67.0	20.3
6	205	10.9	1.9*	70.5	16.7
7	217	10.2	17.8	54.6	17.4
8	207	5.4	20.4	63.0	11.2
9	202	4.5*	37.6	47.8	10.2
Females	**977**	**4.8**	**16.0**	**62.7**	**16.6**
5-6	385	6.5	2.4*	68.7	22.4
7-9	591	3.7	24.9	58.7	12.7
5	191	6.4	2.7*	66.7	24.3
6	195	6.6	2.2*	70.6	20.6
7	203	4.9*	17.7	58.9	18.6
8	196	3.3*	20.0	66.1	10.6
9	192	2.8*	37.3	51.1	8.8

* Moderate sampling variability; interpret with caution

Table 10-4b
Reported School Smoking Restrictions by Sex and Grade, Canada, Youth Smoking Survey 1994

Grade/Sex	Pop. Est (000's)	No Rules	Partial ban	Full ban	Don't know
Total 5-9	**1,910**	**25.0**	**20.5**	**36.5**	**18.0**
5-6	725	41.1	2.6*	28.8	27.5
7-9	1185	15.2	31.5	41.2	12.1
5	314	45.7	2.2*	23.5	28.7
6	411	37.7	2.9*	32.8	26.6
7	387	20.6	22.1	40.8	16.4
8	396	19.9	26.7	40.2	13.2
9	402	5.2*	45.3	42.5	6.9
Males	**971**	**27.4**	**19.8**	**35.3**	**17.6**
5-6	377	42.8	3.1*	29.6	24.6
7-9	594	17.6	30.4	38.9	13.1
5	166	47.6	#	23.9	26.9
6	211	39.0	4.3*	34.1	22.7
7	199	22.6	20.5	39.3	17.6
8	197	24.2	26.9	36.6	12.4
9	198	6.1*	44.0	40.7	9.3*
Females	**939**	**22.6**	**21.3**	**37.7**	**18.4**
5-6	348	39.4	2.1*	27.9	30.7
7-9	591	12.7	32.6	43.6	11.2
5	148	43.5	#	23.1	30.6
6	200	36.3	#	31.4	30.8
7	188	18.5	23.9	42.4	15.2
8	199	15.7	26.4	43.9	14.0
9	204	4.4*	46.6	44.3	4.7*

* Moderate sampling variability; interpret with caution

# Data suppressed due to high sampling variability

Table 10-5a
Reported School Smoking Restrictions by Smoking Category, Grades 5-9 Canada, Youth Smoking Survey 2002

Smoking Status	Pop Est. (000's)	No Rules	Partial Ban	Full Ban	Don't Know
Never Smoker (a)	1,380	5.8	10.7	65.5	18.0
Never Smoker (b)	166	8.3	15.0	62.4	14.3
Puffer	206	7.4	25.0	54.8	12.9
Smoked Beyond Puffing (c)	210	7.0	37.9	47.5	7.6
Daily Smoker	35	14.7	54.6	26.6	#

(a) Never Smoker who has Never Seriously Thought About Smoking
(b) Never Smoker who has Seriously Thought About Smoking
(c) Smoked Beyond Puffing, Not Daily Smoker
* Moderate sampling variability; interpret with caution

Table 10-5b
Reported School Smoking Restrictions by Smoking Category, Grades 5-9 Canada, Youth Smoking Survey 1994

Smoking Status	Pop Est. (000's)	No Rules	Partial Ban	Full Ban	Don't Know
Never Smoker (a)	963	28.8	13.1	34.0	24.2
Never Smoker (b)	174	25.9	14.0	42.1	18.0
Puffer	265	26.1	23.0	34.7	16.3
Smoked Beyond Puffing (c)	418	17.4	33.2	41.7	7.7
Daily Smoker	85	14.6	48.9	33.3	#

(a) Never Smoker who has Never Seriously Thought About Smoking
(b) Never Smoker who has Seriously Thought About Smoking
(c) Smoked Beyond Puffing, Not Daily Smoker
* Moderate sampling variability, interpret with caution

Table 10-6a
Reported School Smoking Restrictions by Province, Grades 5-9, Canada, Youth Smoking Survey 2002

Province	Pop. Est. (000's)	No Rules	Partial Ban	Full Ban	Don't Know
NL	34	5.3	16.5	63.0	15.2
PE	10	3.6*	4.6*	81.4	10.4
NS	61	4.3	5.8	77.3	12.6
NB	48	4.3	19.0	63.5	13.1
QC	479	10.1	39.9	37.4	12.6
ON	764	5.1	5.7	72.9	16.4
MB	76	7.0	11.5	61.2	20.3
SK	67	5.7	19.3	59.1	15.9
AB	219	5.7	9.2	64.1	21.0
BC	247	5.5	11.7	66.6	16.2

* Moderate sampling variability; interpret with caution

Table 10-6b
Reported School Smoking Restrictions by Province, Grades 5-9, Canada, Youth Smoking Survey 1994

Province	Pop. Est. (000's)	No Rules	Partial Ban	Full Ban	Don't Know
NL	44	19.4	13.0	52.3	15.4
PE	10	20.4	14.5	50.2	14.9
NS	61	22.6	13.6	45.9	17.9
NB	51	27.9	14.3	41.9	15.9
QC	466	30.7	45.2	14.3	9.8
ON	698	25.3	9.9	42.6	22.1
MB	73	18.5	10.7	49.6	21.2
SK	75	22.1	14.3	42.2	21.4
AB	198	19.2	8.5	51.9	20.4
BC	234	22.0	23.2	36.0	18.8

* Moderate sampling variability

Table 10-7a
Reported School Rules by Received Education on Health Effects of Smoking Taught in School, Grades 5-9, Canada, Youth Smoking Survey 2002

Taught	Pop Est (000's)	No Rules	Partial Ban	Full Ban	Don't Know
Yes	1,533	5.3	16.3	64.2	14.2
No	252	12.4	18.5	53.4	15.8
Don't know	211	7.5	12.6	52.2	27.8

Table 10-7b
Reported School Rules by Received Education on Health Effects of Smoking Taught in School, Grades 5-9, Canada, Youth Smoking Survey 1994

Taught	Pop Est. (000's)	No Rules	Partial Ban	Full Ban	Don't Know
Yes	1,411	23.4	20.4	39.9	16.4
No	284	32.1	23.7	28.4	15.8
Don't know	197	25.1	17.7	25.1	32.1

Table 10-8a
Reported Student Compliance with School Rules (%) by Smoking Category, for Students who Reported Any School Smoking Rules, Canada, Youth Smoking Survey 2002

Grade/Sex	Pop Est. (000's)	Total	Never Smoker (a)	Never Smoker (b)	Puffer	Smoked Beyond Puffing (c)	Daily Smoker
Total 5-9	**1,539**	**38.2**	**34.5**	**39.1**	**44.1**	**50.5**	**59.7**
5-6	554	32.2	31.4	38.2	34.3	32.5	#
7-9	989	41.6	37.0	39.5	46.6	52.3	59.8
Males 5-9	780	38.8	35.1	42.0	43.9	49.7	62.1
Females 5-9	763	37.7	33.9	35.9	44.5	51.2	57.4

(a) Never Smoker who has Never Seriously Thought About Smoking
(b) Never Smoker who has Seriously Thought About Smoking
(c) Smoked Beyond Puffing, Not Daily Smoker

Table 10-8b
Reported Student Compliance with School Rules by Smoking Category for Students who Reported Any School Smoking Rules, Canada, Youth Smoking Survey 1994

Grade/Sex	Pop Est. (000's)	Total	Never Smoker (a)	Never Smoker (b)	Puffer	Smoked Beyond Puffing (c)	Daily Smoker
Total 5-9	**1,128**	**57.8**	**57.5**	**56.7**	**60.5**	**58.3**	**53.2**
5-6	246	62.7	64.0	69.6	62.4	49.8	#
7-9	882	56.4	54.2	52.5	60.1	59.2	52.6
Males 5-9	559	59.5	62.0	57.1	57.5	58.9	52.4
Females 5-9	569	56.1	52.7	56.4	63.6	57.8	53.9

(a) Never Smoker who has Never Seriously Thought About Smoking
(b) Never Smoker who has Seriously Thought About Smoking
(c) Smoked Beyond Puffing, Not Daily Smoker
# Data suppressed due to high sampling variability

Table 10-9a
Reported Impact of School Rules by Sex and Grade for Students who Smoked in Last 30 Days and Reported Any School Smoking Restrictions, Canada, Youth Smoking Survey 2002

Grade/Sex	Pop Est (000's)	Do Not Smoke At School %	Smoke Less At School %	No Difference %	Other %
Canada 5-9	**93**	**24.0**	**18.8**	**56.5**	**#**
5-6	5.5	61.1*	#	#	#
7-9	88	21.7	19.6	58.2	#
Males	42	26.4	17.1*	56.1	#
Females	51	22.0	20.3	56.8	#

* Moderate sampling variability; interpret with caution
# Data suppressed due to high sampling variability

Table 10-9b
Reported Impact of School Rules by Sex and Grade for Students who Smoked in Last 30 Days and Reported Any School Smoking Restrictions, Canada, Youth Smoking Survey 1994

Grade/Sex	Pop Est. (000's)	Do Not Smoke At School %	Smoke Less At School %	No Difference %	Other %
Canada, 5-9	**233**	**30.9**	**11.9**	**49.8**	**7.4**
5-6	17	54.1*	#	28.3*	12.9
7-9	217	29.1	12.4	51.5	7.0*
Males	100	35.9	7.9*	48.3	8.0*
Females	133	27.2	14.8*	51.0	7.0*

* Moderate sampling variability; interpret with caution
# Data suppressed due to high sampling variability

Table 10-10a
Reported Impact of School Rules by Reported School Rules, for Students who Smoked in Last 30 Days and Reported Any School Rules, Canada, Youth Smoking Survey 2002

School Smoking Rules	Pop Est. (000's)	Don't Smoke At School (%)	Smoke Less At School (%)	No Difference (%)	Other (%)
Partial Ban	48	10.9*	19.9	68.2	1.0*
Full Ban	45	38.2	17.7*	43.8	0.4

* Moderate sampling variability; interpret with caution

Table 10-10b
Reported Impact of School Rules by Reported School Rules, for Students who Smoked in Last 30 Days and Reported Any School Rules, Canada, Youth Smoking Survey 1994

School Smoking Rules	Pop Est ('000)	Don't Smoke At School (%)	Smoke Less At School (%)	No Difference (%)	Other (%)
Partial Ban	113	23.4	15.8*	54.5	6.3*
Full Ban	114	38.4	7.7*	45.3	8.6*

* Moderate sampling variability; interpret with caution

Table 10-11a
Mean Daily Cigarette Consumption by Reported School Smoking Rules, Sex and Grade, Participants who Smoked in Last 30 Days, Canada, Youth Smoking Survey 2002

Grade/Sex	No Rules	Partial Ban	Total Ban
Canada 5-9	**5.9**	**5.2**	**2.6**
5-6	1.2*	0.8*	1.7
7-9	6.2	5.2	2.7
Males	5.9	5.7	3.2
Females	6.0	4.8	2.0

Table 10-11b
Mean Daily Cigarette Consumption by Reported School Smoking Rules, Sex and Grade, Participants who Smoked in Last 30 Days, Grades 5-9, Canada, Youth Smoking Survey 1994

Grade/Sex	No Rules	Partial Ban	Total Ban
Canada 5-9	**4.6**	**4.5**	**3.3**
5-6	2.4	3.9*	2.4
7-9	5.4	4.5	3.4
Males	4.8	5.4	3.8
Females	4.1	4.0	2.7

* Moderate sampling variability; interpret with caution

Table 10-12a
Mean Daily Cigarette Consumption by School Smoking Rules and Day of the Week, Participants who Smoked in Last 30 Days, Grades 5-9, Canada, Youth Smoking Survey 2002

Day	No Rules	Partial Ban	Full Ban
Monday	5.6	5.0	2.8
Tuesday	5.7	5.2	2.5
Wednesday	5.8	5.1	2.7
Thursday	5.6	5.2	2.6
Friday	6.5	5.9	4.0
Saturday	6.6	5.7	3.5
Sunday	6.4	4.9	2.7

Table 10-12b
Mean Daily Cigarette Consumption by School Smoking Rules and Day of the Week, Participants who Smoked in Last 30 Days, Grades 5-9, Canada, Youth Smoking Survey 1994

Day	No Rules	Partial Ban	Full Ban
Monday	4.1	4.0	2.7
Tuesday	4.6	4.2	2.7
Wednesday	5.0	4.2	2.9
Thursday	3.9	4.3	3.0
Friday	5.0	5.4	4.2
Saturday	5.2	5.5	4.2
Sunday	4.4	4.0	3.1

CHAPTER 11 - ALCOHOL AND OTHER DRUGS

Edward M. Adlaf, PhD
Centre for Addiction & Mental Health &
Departments of Public Health Sciences & Psychiatry
University of Toronto

Stephane Racine, MPs
Drug Strategy and Controlled Substances Programme
Health Canada

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HIGHLIGHTS

- Fifty-five percent of Canadian students in grades 7-9 used alcohol in their lifetime and another 41% of lifetime drinkers had drunk heavily, consuming five or more drinks on a single occasion at least once in their lifetime.
- The most commonly used illicit drug among students in grades 7-9 was cannabis, reported by 18%, while 6% reported the use of an illegal drug other than cannabis. Forty percent had used no substance in their lifetime, including tobacco.
- Males were more likely than females to report having used alcohol (57% and 52%, respectively), having used alcohol heavily (43% and 39%, respectively), having used cannabis (20% and 17%, respectively), and they were less likely than females to report not using any drug, including tobacco, alcohol and illicit drugs (37% and 43%, respectively).
- Alcohol and other drug use by students generally increased between grade 7 and 9. Alcohol use increased from 38% to 69%, cannabis use increased from 8% to 30%, and heavy drinking increased from 26% to 53%.
- Regional variation in drug use was evident, especially for the percentage being drug free, including tobacco, alcohol and illicit drug use, which ranged from 21% in Quebec to 48% in British Columbia. Regional differences were also seen in students' reports of drinking alcohol (from 48% to 73%), using cannabis (12% to 32%), using other drugs (3% to 12%), heavy drinking (32% to 49%), and inhalant use (4% to 9%).
- Compared to students who never smoked, those who smoked beyond puffing were more likely to report using alcohol (40% and 93%, respectively), drinking heavily (22% and 71%, respectively), using cannabis (4% and 67%, respectively) and using other drugs (1% and 25%, respectively). In addition, students who had one or more parents who smoked were more likely than students without smoking parents to report using alcohol (65% and 48%, respectively), drinking heavily (48% and 35%, respectively), and using cannabis (26% and 13%, respectively).

An innovative feature of the 2002 Youth Smoking Survey (YSS) is the measurement of substance use other than tobacco, such as alcohol and illicit dugs. Tobacco and alcohol are indeed drugs, and despite a significantly different legal status, the co-occurrence of the use of various psychoactive substances is an important aspect of understanding drug-taking behaviour.[1]

METHODS

This section covers definitions and sample issues specific to this chapter. For detailed methods on the entire 2002 Youth Smoking Survey refer to Chapter 2.

Data and Definitions

The data in this chapter have two unique aspects. First, the questions on alcohol and other drug use were asked only of the 11,757 students in grades 7 through 9. Thus, students in grades 5-6 are excluded from this chapter. Second, the other drug use questions are new to the 2002 cycle of the YSS; consequently, comparisons to the 1994 YSS are not possible.

The variables of central interest in this chapter relate to the use of drugs other than tobacco. We present lifetime prevalence for 13 substance use behaviours: drinking alcohol (Y_Q65A); heavy drinking, defined as consuming five or more drinks of alcohol on one occasion (Y_Q66a); use of marijuana or cannabis (Y_Q67a); amphetamines (speed, ice, meth) (Y-Q68a); MDMA (Ecstasy, E, X (Y_Q69a); hallucinogens (LSD, PCP, acid, magic mushrooms, mesc (Y_Q70A); heroin (smack, H, junk, crank (Y_Q71A); cocaine (coke, crack, blow, snow) (Y_Q72A); use of steroids (testosterone, growth hormones, Dianobol, juice, roids) to do better at sports or to change the way you look (Y_Q73A); inhalants (sniffing glue, gasoline or other products to get high (Y_Q74A); and finally, using a needle to inject any of the above mentioned drugs (Y_Q79A).

Two substance use behaviours derived for the 2002 YSS data include the use of selected prescription drugs not for medical purposes but to get high (DVPDG), which includes any use of two drug types, Ritalin (Y_Q75a) or painkillers such as Talwin and Oxycontin (Y_Q76a), and the use, not for medical purposes but to get high, of selected other substances, which includes any use of two drug types, ephedrine or pseudo-ephedrine (such as Sudafed, ephedera, herbal XTC) (Y_Q77a) or Gravol (Y_Q78a).

In addition, two other substance use variables were created. The percentage who reported other illicit drug use, which included the use of any of 5 major illicit drug types (amphetamines, MDMA, hallucinogens, heroin and cocaine) and the percentage who reported being drug-free, which included those who reported the non-use of any of 10 substances measured in the survey during their lifetime (alcohol, tobacco, cannabis, amphetamines, MDMA, hallucinogens, heroin, cocaine, steroids and inhalants).

The early onset of drug use is highly predictive of future problems and population treatment needs [2]. Early onset is measured by the percentage of all grade 7-9 students who used alcohol (Y_Q65b), drank heavily (Y_Q66b) or used cannabis (Y_Q67b) before the age of 13.

To assess the association between substance use and smoking, we describe two associations, one comparing lifetime substance use to the 3-category smoking behaviour variable (see Chapter 2, Table 2-C; Smoked Beyond Puffing; Puffer; Never Smoker) (SMOKE_2) and the other comparing substance use prevalence by lifetime parental smoking (ANY_PARENTS_SMOKE).

For comparison purposes, the grade 8 YSS data are compared to grade 8 students derived from the 2002 Monitoring the Future Study (MTF) [3]. This survey, the longest on-going school survey in the United States, surveyed about 18,000 8th-graders from about 150 schools throughout the country. Also, because no data on drug use other than tobacco were captured in the 1994 YSS, some data from other Canadian student surveys is presented to illustrate drug use trends.

RESULTS

Lifetime Prevalence of Drug Use

In the 2002 YSS the most common substance use behaviours reported during students' lifetime apart from tobacco use were alcohol use (55%), heavy drinking among lifetime drinkers (41%) and cannabis use (18%) (Table 11-1). A minority of students in grades 7-9 reported using other drugs: inhalants (6%), hallucinogens (4%), prescription drugs (3%). Use of needles for injecting drugs was too low to estimate reliably.

Lifetime Prevalence by Sex, Grade and Region

Use of drugs typically varies according to demographic characteristics of students. Six measures were assessed: alcohol; heavy drinking; cannabis; other illicit drug use (amphetamines, MDMA, hallucinogens, heroin, cocaine); inhalants use and percentage of students who reported being drug free, with respect to sex, grade and region of the country (Table 11-2).

Males were more likely than females to report having used alcohol (57% and 52%, respectively), having used alcohol heavily (43% and 39%, respectively), having used cannabis (20% and 17%, respectively). Males were less likely than females to report being drug-free (37% and 43%, respectively). Sex differences for other illicit drug use and inhalants were not significant.

There were notable linear increases with grade for the reported use of alcohol (increasing from 38% in grade 7 to 69% in grade 9), cannabis (from 8% in grade 7 to 30% in grade 9), heavy drinking (from 26% in grade 7 to 53% in grade 9) and a decrease for the drug free pattern (from 54% in grade 7 to 27% in grade 9). Reported use of other illicit drugs also showed increases with grade, but less so (from 3% in grade 7 to 9% in grade 9). The use of inhalants varied but did not follow a specific pattern according to grade level.

There were sizeable regional variations in drug use, especially for the percentage reporting being drug-free (ranging from 21% to 47%), drinking alcohol (from 48% to 73%), and using cannabis (12% to 32%), and also for other drug use (3% to 12%), heavy drinking (32% to 49%), and inhalants use (4% to 9%). It is interesting to note that the regional differences tend not to be drug specific. For example, compared to the national average, students from Quebec reported the highest rates of alcohol use (73% vs. 55% nationally), heavy drinking (49% vs. 41%), cannabis use (32% vs. 18%), other illicit drug use (12% vs. 6%), and were the least likely to report being drug free (21% vs. 40%). In contrast, students from Ontario, compared to the national average, reported lower rates for alcohol use (47% vs. 55% nationally), heavy drinking (32% vs. 41%), cannabis use (12% vs. 18%), other illicit (3% vs. 6%), inhalants (4% vs. 6%) and higher rates of being drug free (48% vs. 40%). Finally, students in the Prairies were less likely than all students nationally to report cannabis use (14% vs. 18% nationally), and students in British Columbia were less likely than students nationally to report alcohol (48% vs. 54% and more likely to report being drug free (47% vs. 40%).

Early Onset

In the 2002 YSS alcohol was used by 48%, heavy drinking was reported by 16%, and cannabis was used by 14% of students by age 13 years (Table 11-3).

Lifetime Drug Use Among Students who Smoked Beyond Puffing and Puffers

In the 2002 YSS there was a strong association between tobacco use and alcohol and other drug use (Table 11-4). More students who smoked beyond puffing and puffers reported using alcohol and drinking heavily compared to never smokers (93% and 76% versus 40% for alcohol use, and 71% and 44% versus 22% for heavy drinking). This association is even stronger for cannabis use: 67% of those who smoked beyond puffing and 27% of puffers also reported using cannabis in their lifetime compared to only 4% of never smokers. Similar differences also occur for other illicit drug use: 25% of those who smoked beyond puffing and 5% of puffers compared to only 1% of never smokers reported using another drug other than alcohol and cannabis.

Parental Smoking

Drug use by students and parental smoking were associated (Table 11-5). This is especially interesting, given that parental smoking was likely occurring before the initiation of drug use by the children. Alcohol, heavy drinking and inhalants use show moderate associations with parental smoking: students with one or more parents with a history of smoking were more likely than those with no smokers to use alcohol (65% and 48%, respectively), drink heavily (48% and 35%, respectively) and use inhalants (8% and 5%, respectively). Moreover, those students with parents who smoked were twice as likely as those whose parents did not smoke to report using cannabis (26% and 13%, respectively) or other illicit drugs (9% and 4%, respectively).

Comparison with Other Surveys

Lifetime drug use of grade 8 students in the 2002 YSS and the 2002 U.S. Monitoring the Future survey [3] were compared (Table 11-6), revealing several salient findings. First, as noted in other population surveys [4], more Canadian than American students reported drinking alcohol (57% and 47%, respectively). Second, Canadian students in grade 8 reported lower rates of use of inhalants (7.4% and 15.2%, respectively), and MDMA (1.4% and 4.3%, respectively). Third, in these 2002 surveys reported rates of cannabis use were similar (17.1% and 19.2, respectively). Other recent studies have shown that cannabis use among older students tends to be higher in Canadians than in Americans [5, 6].

Although the YSS does not yet have trend data for the use of drugs other than tobacco, it might be useful to describe trends in drug use based on other student surveys conducted in Canada. Four provincial student surveys are dedicated to alcohol and other drug use, have repeated measures since the 1990s and use full random sampling. These surveys occur in Ontario[5], Nova Scotia,[19] New Brunswick[20] and Prince Edward Island.[21] For simplicity, we have restricted our attention to prevalence of cannabis use in the past 12 months. This drug captures the largest pool of illicit drug users and its trends typically parallel trends for the use of other drugs.

Most recent estimates show that between 5% (PEI) to 10% (Nova Scotia) of grade 7 students and between 20% (PEI) and 38% (Nova Scotia) of grade 9 students reported using cannabis in the past year (Table 11-7). The data show that the use of cannabis increased during the early 1990's, with rates increasing in Ontario, Nova Scotia and New Brunswick, alike. Also notable is that increases were robust, occurring among both males and females and within most grade levels. Another finding is that rates of cannabis use have been more stable during the late 1990s, especially in Ontario and Nova Scotia, although some increases have occurred in New Brunswick.

DISCUSSION

Limitations

There are several limitations of the data presented in this chapter. Measurement limitations include the following: (1) the restriction to lifetime prevalence, thus, ignoring issues of frequency and intensity of use; (2) the crudeness of certain drug categories (e.g., prescription drugs in order to get high); and (3) the use of self-reported drug use. Other important limitations include the inability of cross-sectional data to identify causal associations (e.g., the association between cigarette smoking and use of illicit drugs), and the absence of prior YSS data on other drug use to assess trends.

Although we must accept some unknown degree of underreporting of drug use behaviour, the research shows that self-administered, school-based estimates do provide valid data [7-13]. Despite their limitations, the YSS data on alcohol and other drug use provide a number of important findings. First, alcohol was by far the most widely used substance and heavy drinking was not uncommon among Canadian students in grades 7 through 9. One of the key public health findings regards heavy drinking episodes. Some 53% of students in grade 9 and 41% of drinkers in grades 7-9 reported heavy drinking occasions. This behaviour is associated with an array of negative consequences: symptoms of intoxication such as blackouts or hangovers; school problems such as missing school classes or getting behind in school work; unplanned and unprotected sexual activities; aggression ranging from having arguments with friends to rape; trouble with authorities at school and outside (e.g. police); injury, including but not limited to drunk-driving related consequences [14, 15].

Second, the most widely used illicit drug was cannabis – used by 18% of students in grades 7-9 and up to 30% of students in grade 9, a rate comparable to the Canadian Community Health Survey 2002 for 15 to 17 year olds (29.7%) [16]. Although YSS trend data are not available, recent comparisons among 15 to 17 year olds between the 1994 Canadian Alcohol and Other Drug Use Survey and the 2002 CCHS found a non-significant increase in past year cannabis use from 26% to 29% [16]. Provincial trend data on young adolescents also show increases in past year cannabis use among students during the 1990s [5, 17]. International studies indicate that past year cannabis use is highest in Canada compared to students from over 30 other countries [6].

Third, a minority of students, about one in seventeen (6%), used illicit drugs other than cannabis. Most research among student populations indicates that such use is infrequent and that it has been moving downward since the late 1990s [5, 17].

We would be remiss not to comment on the association between cigarette smoking and other drug use. The "gateway theory", which holds that early "soft" drug use (e.g., cigarettes) leads to later "harder" drug use (e.g., cannabis), is a popular view. The results from the YSS, however, cannot adequately address the gateway notion. Although the YSS data show a statistical association, we cannot interpret this as a causal relationship. Indeed, the research literature supports the notion of sequencing and of association when it comes to substance use. Sequencing refers to the fact that the initiation of drugs proceeds sequentially, in ordered stages, from use of licit substances such as alcohol and tobacco to use of cannabis and then on to the use of other drugs such as heroin or cocaine. The notion of association refers to the fact that the use of a drug earlier in a sequence is associated with an increased risk of use of a drug later in the sequence, especially regarding intensive drug use. Although sequencing and association are recognized and accepted notions, there is little support for the notion of causality, specifically, that the use of cigarettes would cause the use of another drug, such as cannabis, later on [1].

Implications for Education, Messaging and Community Based Health Promotion

These results confirm that a significant proportion of youth in grades 7 through 9 have experience with alcohol and other drugs, particularly alcohol. Throughout their school years, most Canadian youths will be exposed to some form of prevention message about alcohol and other drugs. On the other hand, these same youths will also likely be exposed to use of alcohol and other drugs in the media either through movies, song lyrics, publicity or if they follow the news. When it comes to alcohol, they are also highly likely to have been exposed to use by adults or some of their peers.

Public education initiatives to educate youth on substance use and abuse issues and to encourage informed and healthy decision-making are key elements of Canada's Renewed Drug Strategy.[18] Youth-targeted education campaigns to discourage alcohol, marijuana (cannabis) and other drug use are developed in collaboration with key partners and young people themselves. Research and results from a survey like the present one are essential to the development of relevant and strategic initiatives that will focus our efforts and increase the effectiveness and impact of these programs and policies.

Implications for Future Monitoring and Further Research

The information provided here complements other monitoring and surveillance activities on alcohol and other drugs, which typically address populations aged 15 years old and older. Questions on use of alcohol and other illicit drugs will be maintained and expanded in the 2004 YSS. On-going measurement will allow comparisons across time points. This first (2002) YSS cycle about alcohol and other drugs was primarily focused on obtaining prevalence data. Future cycles could be developed to further explore the behaviours identified to be the most common among this population (e.g. alcohol, tobacco and cannabis use) and their interrelationships. A survey of this type is a very cost-efficient vehicle to provide a valid and reliable description of the behaviours under study but is more limited in its capacity to provide insights into the root factors and determinants of such behaviours. Further research is required to gain an understanding into the significance of some of the present results.

Finally, we must remember that not all youth are reached through school surveys. Populations such as street youth, who are more likely to be confronted with alcohol and other drug issues, will not be reached through such a vehicle.

This is why initiatives using a sample frame not based on the school setting are being conducted in parallel to the 2004 YSS.

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Table 11-1
Lifetime Prevalence of Alcohol and Other Drug Use, Grades 7-9, Canada, Youth Smoking Survey 2002**

Drug	%
Pop Est.	(1,189)
Alcohol	54.5
Heavy Drinking[1]	41.0
Cannabis	18.2
Inhalants	5.9
Hallucinogens	3.9
Prescription drugs[2]	3.0
Amphetamines	2.2
Cocaine	2.1
Other Substances[3]	1.6
MDMA (Ecstasy)	1.3
Heroin	#
Steroids	#
Needle Use	#

[1] Among lifetime drinkers
[2] Includes use of Ritalin and painkillers (Talwin, Oxycontin,) not for medical purposes but to get high
[3] Includes use of products containing ephedrine or pseudephedrine (such as Sudafed, ephedera, herbal XTC) used not for medical purposes but to get high
# Data suppressed due to high sampling variability
** Tobacco use is reported in detail in Chapter 3

Table 11-2
Lifetime Prevalence of Alcohol and Other Drug Use by Sex, Grade and Region, Grade 7-9 Students, Canada, Youth Smoking Survey 2002**

	Pop Est. (000)	Alcohol	Heavy Drinking[1]	Cannabis	Other illicit[2]	Inhalants	Drug-Free[3]
Total	**1,189**	**54.5**	**41.0**	**18.2**	**6.1**	**5.9**	**39.6**
Males	611	57.1	42.9	19.5	6.3	6.1	36.5
Females	578	51.7	38.8	16.8	5.9	5.6	42.8
Grade 7	402	38.0	26.1	7.6	3.2*	4.7	54.0
Grade 8	394	56.9	36.8	17.1	6.3	7.4	37.3
Grade 9	393	68.9	53.0	30.1	8.9	5.6	27.0
BC	143	48.3	40.7	18.3	6.2*	6.4*	47.3
Prairies	217	53.7	41.1	13.5	4.9*	5.2*	41.6
Ontario	450	46.5	32.3	11.8	2.9*	4.3	47.6
Quebec	285	72.5	49.4	32.2	11.9	7.4	20.7
Atlantic	94	49.3	44.1	17.0	6.7*	9.1*	42.7

[1] Among lifetime drinkers

[2] Other illicit drugs includes use of amphetamines; MDMA; hallucinogens; heroin; cocaine.

[3] Drug-free implies no lifetime use of any of the following: alcohol, tobacco, cannabis, amphetamines, MDMA, hallucinogens, heroin, cocaine, steroids and inhalants

* Moderate sampling variability; interpret with caution

** Tobacco use is reported in detail in Chapter 3

Table 11-3
Early Onset, Percentage Using Drug By Age 13, Grades 7-9, Canada, Youth Smoking Survey 2002

	Percentage Using By Age 13 (Pop. Est. 1,225)
Alcohol	48.0
Heavy drinking	16.1
Cannabis	13.8

Table 11-4
Lifetime Other Drug Use by Smoking Category, Grades 7-9, Canada, Youth Smoking Survey 2002

Drug	Smoked Beyond Puffing	Puffer	Never Smoker
Pop. Est. ('000)	50	6	1,132
Alcohol	93.3	76.2	39.9
Heavy drinking[†]	70.6	43.7	21.6
Cannabis	67.0	27.0	3.5
Other illicit	24.5	4.7[*]	1.4

[†] Among lifetime drinkers
[*] Moderate sampling variability; interpret with caution

Table 11-5
Lifetime Substance Use By Any Parental Smoking, Grades 7-9 Students, Canada, Youth Smoking Survey 2002

	Any Parental Smoking	
	Yes	No
Pop. Est. ('000)	456	698
	Percent	
Alcohol	64.9	47.8
Heavy Drinking[†]	47.5	35.1
Cannabis	26.4	12.8
Other Illicit	8.9	4.2
Inhalants	7.5	4.8
Drug-Free	28.2	47.3

[†] Among lifetime drinkers

Table 11-6
Lifetime Prevalence of Alcohol and Other Drug Use, Canadian Versus American Grade 8 Students

	2002 YSS	2002 MTF*
	Percent	
Alcohol	56.9	47.0
Cannabis	17.1	19.2
Cocaine	2.3	3.6
Inhalants	7.4	15.2
Steroids	#	2.5
Heroin	#	1.6
MDMA	1.4	4.3

* Monitoring the Future Survey
Note: Population estimate of Youth Smoking Survey 8th-graders based on 394,029
# Data suppressed due to high sampling variability

Table 11-7 Percentage Using Cannabis During the Past 12 Months, Derived From Canadian School Surveys, 1990-2003

Study	Sample	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Ontario [5]	**Total**		**9.9**		**11.5**		**21.9**		**23.9**		**28.0**		**28.6**		**29.6**
	Males		11.0		13.6		24.1		24.2		31.9		32.5		30.9
	Females		8.7		9.5		19.8		23.6		23.9		24.8		28.3
	G7		0.7		1.7		2.6		3.4		3.5		5.1		6.2
	G8										14.9		12.0		10.7
	G9		8.2		8.8		19.5		24.0		25.5		28.8		27.9
	G10										36.4		39.0		35.9
	G11		20.1		22.6		40.8		42.0		48.1		45.7		45.0
	G12										39.4		43.5		44.8
Nova Scotia [19]	**Total**		**17.2**					**32.1**		**37.7**				**36.5**	
	Males		na					34.1		39.8				38.3	
	Females		na					29.8		35.6				34.9	
	G7		na					10.8		11.4				10	
	G9		na					31.7		41				37.6	
	G10		na					40.5		47.6				45.4	
	G12		na					46.8		51.7				56.8	
New Brunswick [20]	**Total**			**17.4**				**28.9**		**30.6**				**34.9**	
	Males			20.5				30.4		33.1				34.2	
	Females			14.3				27.6		28.2				35.6	
	G7			3.5				6.5		7.1				7.9	
	G9			13.7				28.4		29.9				31.3	
	G10			22.5				39		40.9				47.2	
	G12			29.5				40.9		43.4				55.1	
Prince Edward Island [21]	**Total**							**22**		**22**				**24**	
	Males							24		22				27	
	Females							21		19				21	
	G7							5		4				5	
	G9							19		17				20	
	G10							27		28				30	
	G12							37		34				41	

CHAPTER 12 - INTERNATIONAL COMPARISONS

Alan Diener, PhD
Office of Research, Surveillance and Evaluation
Tobacco Control Programme
Health Canada

David Hammond, MSc
Department of Psychology
University of Waterloo

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HIGHLIGHTS

- Rates of "ever tried" smoking were lower in Canada than they were in the four other countries for which data were reviewed. Twenty-six per cent of Canadian youth in grades 6-9 had ever tried smoking compared to rates of between 36% to 44% in Australia, England, Scotland, and the United States.
- There were no consistent differences in smoking behaviour amongst males and females in the countries reviewed.
- All five countries experienced falling prevalence rates of smoking among youth in recent years.
- Overall, 26% of Canadian youth in grades 6-9 who smoke purchased cigarettes from retail sources, while 12.5% of US youth who smoke purchased cigarettes from retail sources.
- Health practitioners in the US were more likely than Canadian health practitioners to talk to youth about the dangers of tobacco use.
- Common definitions of youth smoking behaviour and common questions should be encouraged across national surveys employed by different countries. This would permit similar analyses of data collected and better comparisons of tobacco use behaviours and their determinants across countries.

INTRODUCTION

This chapter compares smoking behaviour and related information among youth in Canada, Australia, England, Scotland, and the United States (US). These countries provide reasonable comparisons with Canada for several reasons. First, they share similar standards of living and cultures. Second, adult smoking rates in these countries are similar –between 21 and 26% in 2002—and the patterns of smoking are similar with respect to age and sex.[a,1,2,3,4]

Each of these countries also conducts a regular school based survey of youth smoking behaviour and related information. Direct comparisons between these surveys are difficult due to differences in methodologies and definitions. However, the surveys share enough core questions that it was possible to analyse and compare certain variables including the prevalence of tobacco use, sources of cigarettes, store refusals and asking for identification and whether health practitioners discussed smoking with youth, although all the information on each topic was not available for all of these countries.

Tobacco Control Policies and Programs

Prevention of tobacco use among youth is a primary objective of tobacco control policy, both within Canada and around the world. Although tobacco control regulations and legislation differ considerably among Canada, Australia, England, Scotland, and the United States, each has introduced leading-edge policies intended to reduce smoking among youth, including labelling policies, advertising restrictions, and taxation policies. The following provides a summary of tobacco control policies in these countries as of 2002, when the YSS was administered. It should be noted that there have been significant changes to several of these policies since 2002.

Health Warning Messages and Labelling Policy

Health warning messages on cigarettes are an important source of health information for youth. Health warning messages not only communicate the health risks of smoking, but can also provide cessation advice, and may encourage some smokers to quit. In 2002, there were substantial differences in the strength and size of health warning messages among the four countries. Canada had the most comprehensive health warning messages in the world, followed by Australia, the United Kingdom (UK), and the US. Canadian cigarette packages displayed one of 16 full colour graphic health warning messages, covering 50 percent of the cigarette package, with additional information inside the cigarette package. In contrast, Australian cigarette packages featured one of six black and white rotating health warning messages, covering 25 percent of the front of the cigarette package. The UK cigarette packages also had six

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[a] Each country reports results for different age groups. In Canada the prevalence rate was 21% for ages 15 and up. In the Unites States the prevalence rate was 22.5% for ages 18 and up. In the UK the prevalence rate for those aged 16 and over was 26%, and in Australia the prevalence rate for those aged 14 and over was 23% (the most recent available data from Australia was from 2001).

text health warning messages, although these covered only 6% of the cigarette package, whereas US cigarette packages carried four small text-only health warning messages on the side of cigarette packages, introduced in 1984. As of 2002, there were no restrictions on the use of potentially misleading brand descriptors such as "light" or "mild" on cigarette packages in any of the countries examined.

Sales to Minors

Tobacco sales to individuals under the age of 18 were prohibited in all four countries. Compliance with this legislation varies within the four countries, yet remains generally high relative to international standards.

Tobacco Advertising, Sponsorship, and Promotion

Comprehensive restrictions on all forms of tobacco advertising are an essential component of youth smoking prevention strategies. In general, restrictions on tobacco advertising, in 2002, were strongest in Australia where all forms of advertising including print media have been banned since 1993 and Canada where most forms of advertising were banned.[b] Print advertising was unrestricted by law in the UK and US and relatively widespread in 2002. Despite more comprehensive legislation in Canada and Australia, point-of-sale displays, sport and cultural sponsorships and promotional contests remained largely unrestricted, similar to the situation in the UK and US.[c]

Note that it is difficult to compare national differences in tobacco advertising, sponsorship, and promotion given ongoing changes in policy and the fact that restrictions are often introduced regionally. Note also that several policies have been introduced since the 2002 YSS was administered. For example, in Canada, tobacco company sponsorship promotions were prohibited effective October 2003. In the UK, all tobacco advertising (with limited exceptions) has been banned since February 1993, and all sponsorship promotions will be banned as of July 31, 2005.[d] Further changes are imminent in response to the Framework Convention on Tobacco Control (FCTC), which requires that signatories eliminate all tobacco advertising, promotion, and sponsorship within 5 years of ratification of the Convention.[e] The FCTC was ratified by Canada, Australia and the United Kingdom in 2004.

Prices and Taxation Policies

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[b] In Canada, tobacco print advertising is restricted to publications with a minimum of 85% adult readership, or publications directly mailed to an adult.

[c] Note that, in Canada, restrictions were phased in between 1998 and October 2003

[d] Domestic tobacco sponsorships were banned in the UK in July, 2003. International sponsorships will be banned as July 31, 2005.[5] A European Union directive, which covers the UK, banning tobacco advertising and sponsorship in all member countries by July 31, 2005 was agreed on in 2002.

[e] Note that countries that cannot undertake a comprehensive ban due to constitutional requirements (including Canada) shall apply restrictions on all tobacco advertising, sponsorship, and promotion.

Increases in the price of cigarettes leads to a decrease in cigarette use and overall smoking prevalence, particularly among youth smokers.[6] As a consequence, cigarette taxes have become among the most widespread tobacco control policies. In 2002, cigarette taxes were lowest in the US and relatively equal among Canada, the UK, and Australia. However, because tobacco companies and retailers ultimately determine price, cigarettes were most expensive in the UK and roughly equal among the remaining three countries in 2002. Note, however, that these national averages obscure rather large differences between state and provincial taxes, within countries. Given the regional differences in price and taxation— particularly within Canada and the US— it is somewhat misleading to discuss national-level differences in taxation.[f]

Smoke-Free Restrictions

Smoke-free policies have emerged as a critical strategy to protect the health of non-smokers. Workplace smoking restrictions have the added benefit in that they reduce tobacco use among employees who smoke. As of 2002, there were no national-level smoke-free policies in any of the four countries. Rather, smoke-free legislation has been introduced at the regional (province or state) and municipal level in all four countries. As a result, smoke-free policies vary considerably within each of the four countries and among the countries.

Anti-Smoking Media

Mass media campaigns are an important component of tobacco control strategies. Effective media campaigns help to communicate the health consequences of smoking and render tobacco use among both youth and adults less socially acceptable (see note below). Mass media campaigns are introduced at the national, regional, and even local levels in each of the four countries. In Canada, for example, 40% of the federal tobacco control budget was set aside for mass media campaigns, which is then divided between national and regional campaigns. Because media campaigns are conducted both nationally and regionally, it is difficult to compare the level of anti-smoking media between the countries.

Youth Prevention Programs

School-based programs remain the most common setting for youth prevention programs in each of the four countries. Yet, the scope and effectiveness of these programs vary considerably. In addition, although school-based programs may receive support from federal tobacco control agencies, they are rarely implemented on a national level and are typically local in scope. As a result, it is not possible to compare youth prevention programs between the countries in any systematic way.

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[f] For example, in Canada, federal excise taxes in 2002 were $1.59 per pack of 20 cigarettes, while provincial taxes ranged from $1.72 per pack in Ontario to 3.20 per pack in Manitoba and Saskatchewan[7]. Provincial and federal sales taxes may also be applicable. In the United States, in 2003, federal taxes were $0.39 per pack while state excise taxes on cigarettes ranged from $.03 in Kentucky to $2.40 in New Jersey.[8] Some counties and cities also impose cigarette taxes.

METHODS

Each of the countries included in this chapter conducts a regular school-based survey of smoking behaviour and related information. The most recently available published reports and data for the United States, England, Scotland, and Australia were employed.[9,10,11,12,13] Comparing results across surveys is difficult due to differences in methodologies including what questions were asked and how they were asked , as well as the ages or grades of the target population. It is also common to find different definitions of smoking behaviour between youth and adults across countries. As discussed in Chapter 2, definitions of adult smoking behaviour are well established: a smoker is typically defined as an individual who has smoked over 100 cigarettes in their lifetime and smoked in the last 30 days, while a daily smoker is typically defined as an individual that has smoked every day of the last 30 days. However, the criteria used to define youth smoking, particularly for experimental tobacco use common to the age group surveyed in the YSS, is not as well established.

The surveys used in this chapter all employed different methodologies, and definitions of smoking behaviour. Hence, we were limited in what definitions we could use for comparison purposes. The prevalence of having ever tried smoking was reported for each country and was used in this analysis. Each country also surveyed different grades or age groups limiting comparisons between countries. The most comparable grade or age groups were used in all the analyses reported here. More detailed comparisons were possible between Canada and the United States due to our access to the 2000 National Youth Tobacco Survey (NYTS) data set.[10] Comparable questions on the sources of cigarettes were available for Canada, United States, and Australia. It was also possible to analyse the prevalence of whether health practitioners advised their patients on tobacco use in Canada and the United States. (See the appendix for the questions employed in analyses for this chapter).

The Surveys

In the United States, the National Youth Tobacco Survey (NYTS) collects smoking related information from students in grades 6-12. The first NYTS was conducted in 1999, and it was repeated in 2000 and 2002. As of the writing of this chapter only a preliminary report was available for the 2002 NYTS, with very little comparable information to that available from the YSS.[9] However, the data set for the 2000 NYTS was available from their web site and was used for this chapter.[10] The 2000 NYTS obtained responses from a total of 35,828 youth in 324 schools. The overall response rate was 84% (the school response rate was 90% and the student response rate was 93%). A total of 21,950 youth in grades 6-9 –those comparable to the YSS sample-- completed the NYTS.

England conducted its first Survey on Smoking, Drinking, and Drug Use Among Young People in England in 1982. The most recent survey was conducted in 2002 and sampled youth 11-15 years old in school years 7-11.[11] A total of 9,859 students from

321 schools completed both a survey and a 7-day smoking diary. The overall response rate to this survey was 63% (the school response rate was 72% and the student response rate was 88%). The main outcome measure of smoking behaviour employed was "regular smoker" defined as an individual that smokes at least once a week

The Survey on Smoking, Drinking, and Drug Use Among Young People in Scotland, also started in 1982, employs a similar methodology to the English survey in terms of the questions included and the definitions of smoking behaviour used in the analysis. The most recently available published data were from the 2000 survey.[12] The sample in the Scottish survey included youth aged 12-15 years old, in school years S1 to S4 (comparable to grades 8-11 in Canada and the United States). A total of 4,774 students from 150 schools completed the survey and 7-day smoking diary. The overall response rate for this survey was 64% (the school response rate was 79% and the student response rate was 90%).

The Australian Secondary School Alcohol and Drug (ASSAD) Survey was first conducted in 1984. The survey of 12 to 17 year old students is conducted every 3 years and was last conducted in 2002.[13] A total of 23,417 students, between the ages of 12-17, from 363 schools completed the survey[g]. Sixty-five per cent of the schools contacted agreed to participate in the survey. The response rate among students was 84%.[h] Results were either broken down by age or by age-group. The age-groups employed were 12-15 and 16-17 years old. Hence, in this chapter we focused on the 12 to 14 year olds when results were presented for each age and 12-15 year olds when the results were only broken down by age group.

Definitions and Questions Compared

Data with respect to "ever tried smoking even just a puff" were analyzed for all of the countries. Due to methodological differences, it was not possible to compare any other smoking behaviour definitions except for Canada - Unites States comparisons. With direct access to the 2000 NYTS data set it was possible to analyse the U.S. data according to the 3-category definition of smoking status described in Chapter 2 (Table 2-C) and used elsewhere in this report - Never Smoker, Puffer, and Smoked Beyond Puffing. The NYTS and YSS samples were limited to grades 6-9 in order to be more comparable.

Information with respect to the sources of cigarettes (retail or social) was available from Canada, the United States, and Australia. Caution should be used when comparing the responses as the times frames employed in the question were different in each country's survey. In the YSS, respondents were asked where they *usually* obtained their cigarettes. In the NYTS respondents were asked where they usually obtained their cigarettes *in the last 30 days*. In the Australian survey, students were asked where they got their *last* cigarette.[1] Although the UK surveys included questions on sources of cigarettes, the respondents were not limited to just one response (i.e. they could have picked numerous retail and social sources). Hence, the responses from the UK surveys were not directly comparable to the YSS data and they were not analyzed.

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[g] Nine-hundred and eighty-six students were outside of the age range and were excluded in all analyses.

[h] The actual student response rate was not reported in White and Hayman (2004). However they noted that the aim was to survey 80 students from each participating school. Hence with 363 schools participating 29,040 students would have been asked to participate. Note that more students were likely asked to participate as in addition to the 80 students selected from each participating school, as replacement students were also selected although it is not clear how many were asked to participate. Hence the 84% response rate is likely over-stated.

The YSS and NYTS included questions regarding whether the respondents had been asked for identification or had been refused a cigarette sale. The UK surveys also included the latter question. These data were included in our analysis.

The YSS and NYTS included similar questions regarding whether a health practitioner had ever discussed the dangers of smoking or had asked if their patient had smoked. These data were not available for the UK or Australia.

The UK and Australian surveys only broke down their results by age (as opposed to grade). Hence, the YSS and NYTS results were also broken down by age for comparison purposes. Unfortunately, there were no comparable questions regarding exposure to environmental tobacco smoke or any attitude and belief questions. For Canada - United States comparisons all results were rounded off to one decimal place since the actual data sets were available and used in the analysis. When data from England, Scotland, or Australia were included in the comparisons the results shown were rounded to the nearest whole number as this is how results pertaining to those countries were published.

Sample and Response

The YSS was limited to grades 6-9 (or ages 11-14) for most comparisons as this was the minimum grade employed in all of the other surveys. In general, missing YSS data for items discussed in this chapter accounted for less than 10% of the total responses. As such, the data presented are based on those for whom complete data were available. According to Statistics Canada guidelines, data were deemed non-reportable if the sample size was too small (n<30). Statistical differences between countries were difficult to ascertain as confidence intervals were generally not reported.

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[1] Note that the responses in the YSS data set were limited to students who had smoked a whole cigarette in their lifetime and had smoked in the last 30 days. The NYTS analysis was similarly limited for comparison purposes. The Australian responses were limited to students that had smoked in the last 7 days.

FINDINGS

Prevalence of Tobacco Use

It is important to reiterate that direct comparisons are difficult across surveys. While comparable questions were employed in this analysis, different age groups were sampled in each survey. For example, the UK surveys reported results for the age group 11-15 years old. Hence, the sample was slightly older than that of the YSS and this must be kept in mind when reviewing the results.

The Canada – United States results are most comparable as the same grades were analysed and more types of smoking behaviour could be examined. Rates of prevalence of tobacco use were higher for all products in the United States (Table 12-1). Almost 41% of U.S. youth reported that they had ever tried smoking, compared to 26% of Canadian youth in grades 6-9. U.S. students were four times more likely to have ever tried chewing tobacco (10.5% versus 2.5%).

Almost twice as many U.S. students had smoked beyond puffing compared to Canadian students (27% and 15%, respectively) (Table 12-2). This finding was also observed when examining males and females separately. The difference in prevalence of smoked beyond puffing was largest between the grade 6 students and the gap narrowed slightly across the higher grades (Table 12-3).

Rates of *ever tried* smoking were lower in Canada than they were in the other countries. Twenty-six percent of Canadian youth in grades 6-9 had ever tried smoking. The rates in the other countries were quite consistent and ranged from 36% to 44% (Table 12-4).[j] Note that for the UK, 15 year olds were also included in the analysis (approximately grade 10 in Canada and the United States), while in Australia and Scotland 11 year olds were not included in the sample.[k]

There were no consistent gender differences between the countries. In Australia and Canada the prevalence of having ever tried smoking is similar amongst males and females. In the United States slightly more males had ever tried smoking than females and in England and Scotland slightly more males had ever tried smoking than females (Table 12-4). Rates of "ever tried smoking" among youth were lower in Canada than the other countries for each age amongst those who were between 11 through 14 years old (Table 12-5).

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[j] Canada: Grades 6-9, approximate ages 11-14; U.S.: grades 6-9, approximate ages 11-14; England: ages 11-15; Scotland: ages 12-15; Australia: ages 12-14.

[k] The Australian results for the 12-14 year old age group were estimated based on the published results in White and Hayman (2004) and are rough estimates. White and Hayman only presented results on prevalence of having ever tried cigarettes broken down by age and for the total population aged 12-17. In the latter age group, 46% of males had ever tried cigarette smoking, 47% of females had ever tried smoking, and 47% of both sexes combined had ever tried cigarette smoking.

All countries had experienced similar trends with declining prevalence rates. The decline in proportion of youth who reported *ever trying* cigarettes between 1994 and 2002 was greater in Canada than in England, Scotland, and Australia. In 1994, 42%, 47%, and 53% of youth in Canada, England, and Scotland, respectively, had ever tried smoking cigarettes.[l,11,12,14] In 1993, 50% of Australian youth had ever tried smoking.[m,13] In 2002, the rates had fallen to 26%, 42%, 48%, and 36% in Canada, England, Scotland, and Australia, respectively. This finding is consistent with trends relating to adult prevalence in the countries reviewed.[n]

Sources of Cigarettes

In Canada, more youth reported buying cigarettes from retail sources than in the United States (Table 12-6). Overall, 26% of Canadian youth in grades 6-9, who had smoked in the last 30 days, purchased cigarettes from retail sources, while 12.5% of US youth who had smoked in the last 30 days purchased cigarettes from retail sources. In Australia, the respondents were asked for the source of their *last* cigarette and 14% of 12-15 year olds, who had smoked in the last 7 days, had purchased their last cigarette from retail sources. Both Canadian youth and US youth were asked for proof of age approximately the same amount of time (30% in Canada, 32% in US). With respect to having been refused a sale of cigarettes, the rates ranged from 37% in Canada to 45% in the United States (Table 12-7).

Practices of Health Practitioners

In the YSS about 20% of youth had had their doctor talk to them about the health effects of tobacco compared to 24% of comparable American youth (Table 12-8)Almost twice as many youth in the US than in Canada stated that their dentist had spoken to them about the dangers of tobacco use (16% and 9%, respectively).

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[l] Canada: ages 11-14; England: ages 11-15; Scotland: ages 12-15; Comparable data was not available for the United States; However, results from the Monitoring the Future Study have shown that prevalence rates of cigarette use among 8th, 10th and 12th grade students have been falling since 1996.[15]

[m] Ages 12-15. Australian data was not available for 1994. Note that the results for 12-14 year olds was estimated using the data presented in Hill et al (1995) and is an estimate.

[n] Adult smoking rates have been falling or have stabilized in each country.

DISCUSSION

Prevalence of Tobacco Use

It is unclear why smoking rates were higher in the other countries than in Canada. The US and Scottish data are from 2000 so one explanation is that rates were higher due to the earlier sampling period. However, there was no statistically significant decrease in smoking between the 2000 and 2002 NYTS. Hence, the difference in time frames, with respect to the U.S. data, may not explain the difference.

The smoking prevalence among adults in each of the four countries was roughly similar in 2002: Canada -21% (23% male, 20% female), US -23% (25% male, 20% female), Australia - 23% (26% male, 21% female), and the UK - 26% (27% male, 25% female). Smoking remained more prevalent among males; however, gender differences in smoking prevalence continued to narrow in each of the four countries.

The lower smoking rates among Canadian youth may be attributable to Canada's comprehensive tobacco control policies, many of which are focussed upon preventing youth smoking. Many of these national policies have been implemented or strengthened since 1994 and have been supplemented by provincial, territorial, and municipal policies. These policies have included increases in taxation; school smoking bans and other school-based intervention programs, advertising bans, smoke-free legislation, and new health warning messages on cigarette packages. Groups such as the Youth Action Committee (YAC) on tobacco have provided valuable input on issues and ideas related to tobacco control. While YAC is a federal committee, there are also many youth tobacco groups in the provinces and territories, as well as in local communities and schools.

Sources of Cigarettes

While US youth were less reliant on retail sources of cigarettes than Canadian youth, the percentage of youth being asked for proof of age, or that were refused sales was similar in both countries. It should be noted that the Canadian questions asked about *ever* having been asked for proof of age or being refused a sale, whereas the US questions explicitly asked about the past 12 months only. One explanation for this apparent discrepancy is that youth in the United States made fewer attempts to purchase cigarettes from retail sources, perhaps due to having difficulties purchasing cigarettes in past experiences.

U.S. youth may be less likely to obtain cigarettes from retail sources than Canadian youth due to impact of the Synar Amendment. The Synar Amendment of the Federal Public Health Service Act, was passed in 1992, and requires states to limit tobacco sales to those 18 years of age and over and specifies requirements with respect to retailer compliance regarding sales of tobacco products to minors.[16] Regulations with respect to inspections and other facets of tobacco sales are clearly specified in the

Synar Amendment. Failure to comply with the Amendment, including achieving targeted compliance rates, results in a loss of federal funding for the states. Hence, the Synar Amendment has acted as an incentive for states to improve their compliance rates through increased enforcement. Compliance reached over 80% in 44 states by 2002.[17] In comparison, in Canada, compliance rates were about 70% nationally, in 2002.

It should be noted that, although less youth are obtaining their cigarettes from retail sources in the U.S. than in Canada, this has not resulted in lower rates of tobacco use. Clearly, preventing retail access to cigarettes is just one aspect of tobacco policy. As social sources become more important for youth, it will become more vital for policies to target them as well.

Practices of Health Practitioners

It is not clear why health practitioners, particularly dentists, talked to youth about the dangers of tobacco use more often in the US than in Canada. One explanation may be that clinical practice guidelines have been promoted more widely in the US than in Canada.

Implications for Regulation and Legislation

The differences in how youth access cigarettes in the US and Canada may have implications with respect to regulation and legislation. It is clear that youth in the US are less likely to obtain their cigarettes from retail sources. The incentives created by the Synar Amendment has apparently been effective in increasing compliance and is likely the cause for the reduction in youth obtaining cigarettes from retail sources. It would be difficult, however, for Canada to implement similar incentives. The incentives in the U.S. work since individual states are responsible for enforcement and must follow federal regulation such as the Synar Amendment to be eligible for federal funds. In Canada the federal government is responsible for the regulations and enforcement of them. In addition, without any incentives from the federal government, several provinces have undertaken more stringent regulations than they are required to. For example, six provinces (Newfoundland and Labrador, Prince Edward Island, Nova Scotia New Brunswick Ontario, and British Columbia,) have a higher minimum age requirement for the sale of cigarettes – nineteen years of age – than the federal government minimum standards (eighteen years of age).

Implications for Future Monitoring and Further Research

One of the most important tasks that must be undertaken in the future is to develop a consensus with respect to definitions of youth smoking behaviour not only in Canada but also at the international level. Clearly, the biggest limitations of this chapter were due to difficulties in comparisons across surveys. While it was possible to compare those who have *ever tried* smoking, it was not possible to examine other smoking behaviours, which may have created learning opportunities. Not only is it important to develop consensus with respect to smoking behaviour definitions, it is potentially just as important to develop a series of common questions relating to knowledge and attitudes with respect to smoking and tobacco use. These data from individuals should also be matched systematically with program and policy data at local and state levels to potentially gain a better understanding of how different regulations, legislation, and the other aspects of tobacco control policy affect youth smoking behaviour and attitudes. Understanding of the association of individual behaviour with environmental influences could help establish leading edge interventions. However, it must be noted that the highest priority for all national surveys should be to meet local and national needs and that surveys must be adapted to the school systems in which they are undertaken. Any comparability should not be sought at the cost of reducing data quality or usefulness with respect to these needs.

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Table 12-1

Tobacco Use, Canada and Unites States, Grades 6-9

	Canada	U.S.
Ever Tried Smoking Cigarettes (%)	26.4	40.8
Ever Tried Chewing Tobacco (%)	2.5	10.5
Ever Tried Cigars (%)	15.5	22.9
Any Type of Tobacco Product (%)	28.7	45.3
Daily Cigarette Smokers (YSS 94 Def'n) (%)	1.8	2.5
Current Smokers (YSS 94 Def'n) (%)	3.3	4.9
Mean Age Smoked First Cigarette[1]	12.0	11.8

[1] Amongst those who have smoked a whole cigarette (NYTS: "How old were you the first time you smoked a whole cigarette?" YSS: How old were you when you smoked your first whole cigarette?")

Sources: YSS 2002, NYTS 2000

Table 12-2

Smoking Category* by Sex - Canada and United States, Grades 6-9 Percentages

	Never Smoker	Puffer	Smoked Beyond Puffing
Canada	**73.6**	**11.6**	**14.8**
Males	74.0	12.2	13.8
Females	73.3	10.9	15.8
United States	**59.2**	**13.6**	**27.1**
Males	57.2	14.2	28.6
Females	61.3	13.0	25.7

Sources: YSS, 2002 and NYTS 2000

*Note that Table 2-C defines categories of smokers.

Table 12-3

Smoking Category, by Grade, Canada and United States, Grades 6-9 Percentages

	Never Smoker	Puffer	Smoked Beyond Puffing
Canada, 6-9	**73.6**	**11.6**	**14.8**
7-9	68.5	13.3	18.2
6	89.1	6.4	4.5*
7	78.8	10.4	10.7
8	67.8	13.5	18.6
9	58.1	16.1	25.7
United States, 6-9	**59.2**	**13.6**	**27.1**
7-9	53.4	14.8	31.8
6	76.9	10.1	13.0
7	64.5	14.7	20.8
8	50.9	15.6	33.5
9	44.9	14.1	41.0

* Moderate sampling variability

Sources: YSS, 2002, NYTS, 2000

Table 12-4

Ever Tried Smoking, by Country and Sex

	Ever Tried Smoking (%)
Canada	**26**
Males	26
Females	27
United States	**41**
Males	43
Females	39
England	**42**
Males	39
Females	44
Scotland	**48**
Males	44
Females	51
Australia	**36**
Males	37
Females	34

Canada: grades 6-9, ages 11-14
U.S: grades 6-9, ages 11-14
England: ages11-15
Scotland: ages 12-15
Australia: ages 12-14.

Source: YSS (2002), NYTS (2000), White and Hayman (2004); Boreham and McManus (2003) ; Boreham and Shaw (2001)

Table 12-5
Ever Tried Smoking, by Country and Age (Percentages)

Age	Canada	United States	England	Scotland	Australia
11	10	15	16	NA	NA
12	18	23	27	30	27
13	31	38	42	49	31
14	40	47	55	60	47

Source: YSS (2002), NYTS (2000), White and Hayman (2004); Boreham and McManus (2003) ; Boreham and Shaw (2001)

Table 12-6

Source of Cigarettes, by Grade, Canada and U.S., Grades 6-9 (Percentages)

Grade	Social Sources	Retail Sources
Canada[1] 6-9	**74.2**	**25.8**
7-9	73.7	26.3
6	84.0	#
7	83.5	#
8	73.4	26.6*
9	69.4	30.6
United States[2], 2000	**87.5**	**12.5**
7-9	87.3	12.7
6	91.8	8.2
7	90.4	9.6
8	87.8	12.2
9	85.5	14.5

[1] YSS: retail sources include: Buy them from a small grocery/corner store, another kind of store, vending machine, and internet. Social sources include: buy them from a friend or someone else; brother or sister gives them to me; mother or father gives them to me; friend or someone else gives them to me; I take them from my mother/father/sister/brother

[2] NYTS: retail sources include: Bought in store, bought from vending machine. Social sources included: bought for them by someone else, borrowed them from someone, took from family member or store, given to them by person >18 years, obtained then some other way.

*Moderate sampling variability
# Data suppressed due to high sampling variability

Source: YSS (2002); NYTS (2000

Table 12-7

Sales Refusals And Proof Of Age

	Canada	U.S.	England	Scotland
Asked for Proof of Age[1] (%)	29.6	31.7	NA	NA
Refused to Sell to You[2] (%)	44.7	37.2	48	42

[1] questions employed:
Canada (YSS): Have you ever been asked for an ID when trying to buy cigarettes?
United States (NYTS): When you bought or tried to buy cigarettes in a store during the past 30 days were you ever asked to show proof of age?

[2] questions employed:
Canada (YSS): Has anyone in a store ever refused to sell you cigarettes?
United States (NYTS): During the past 30 days, did anyone ever refuse to sell you cigarettes because of your age?
England and Scotland: At any of these times (in the past year) when you went into a shop to buy cigarettes, did the shopkeeper refuse to sell them to you?

Source: YSS (2002); NYTS (2000); Boreham and McManus (2003) ; Boreham and Shaw (2001)

Table 12-8

Practices of Health Practitioners, Canada and United States (Percentages)

	Canada	United States
Doctor Talked to You About Tobacco?[3]	19.5	23.7
Dentist Talked to You About Tobacco?[4]	8.8	15.6

[3] The questions were slightly different. NYTS: "Has a doctor or someone in a doctor's office talked to you about the danger of tobacco use in the past 12 months?" YSS: "Has a doctor ever talked to you about what smoking or using smokeless tobacco does to your health?"

[4] NYTS: "Has a dentist or someone in a dentist's office talked to you about the danger of tobacco use in the past 12 months?" YSS: "Has a dentist ever talked to you about what smoking or using smokeless tobacco does to your health?"

Source: YSS (2002); NYTS (2000)

CHAPTER 13 - OVERVIEW & CONCLUSION

Murray Kaiserman, PhD
Tobacco Control Programmme
Health Canada

Paul McDonald, PhD
Department of Health Studies and Gerontology
Health Behaviour Research Group
University of Waterloo

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Since the Youth Smoking Survey (YSS) of 1994 tobacco control activities in Canada targeted towards youth have reached unprecedented levels. While, on the legislative front, the *Tobacco Products Control Act* (TCPA, 1988) first identified the protection of youth within the purpose of the legislation, it was the *Tobacco Sales to Young Persons Act* (TSYP,1994) that restricted youth access. This was reaffirmed in the *Tobacco Act* of 1997. In addition, in 2000, the Tobacco Product Information Regulations introduced graphic health warning messages on tobacco products occupying 50% of the package

Legislation and regulation were not the only activities occurring during this period. Beginning in 1994, the Federal government implemented three major tobacco control strategies, the *Tobacco Demand Reduction Strategy* (TDRS, 1994-1997), the *Tobacco Control Initiative* (TCI, 1997-2002) and the Federal *Tobacco Control Strategy*, (FTCS, 2001 - 2011) which provided a total of almost $800 M towards all federal tobacco control activities, with an emphasis on youth. Key to each of these strategies was the implementation at the federal level of a wide variety of programs aimed at either discouraging youth from taking up smoking or encouraging youth to quit smoking, and the provision of support for such interventions at all levels. Also, guided by the *National Tobacco Control Strategy (1999)*, which was developed jointly by the federal, provincial and territorial governments and leading non-governmental organizations, legislation and programs implemented at the provincial, territorial, regional and municipal levels have contributed to tobacco control and to the reduction in the prevalence of tobacco product use.

As a result these activities, by 2002, as found in the second YSS, 69% of Canadian youth in grades 5-9 were classified as never smokers who had never seriously thought about smoking, i.e., they had never tried a cigarette, even a few puffs, and had never thought seriously about smoking, compared with 51% of youth in the 1994 YSS. Further, in 2002, only 23% of Canadian youth in grades 5-9 were classified as ever smokers, including 2% of Canadian youth who were daily smokers (Chapter 3). These rates were considerably lower than those found in the 1994 YSS, where 40% of youth were ever smokers and 4% were daily smokers. Among youth surveyed in the 2002 YSS, 10% had tried to smoke, even just a few puffs, but had never smoked a whole cigarette (classified as puffers) and another 10% had smoked more than a whole cigarette but were not current daily smokers (classified as smoked beyond puffing, not daily smokers). While all youth smoking rates were lower in 2002, self reported consumption by daily smokers increased to an average of 8.1 cigarettes per day in 2002 from 7.4 cigarettes per day in 1994.

In the 2002 YSS, ever smoking rates exhibited differences by province, sex, and grade. Across the provinces, ever smoking rates ranged from a high of 37% in Quebec to a low of 16% in British Columbia and Ontario. As found in the 1994 YSS, ever smoking rates increased progressively from grade 5 to grade 9 for both males and females. In contrast, for the most part, differences in the various smoking rates of boys and girls across the grades were minimal. By grade 9, there was no difference between the sexes with 58% of males and 58% of females reporting never having smoked.

In the 2002 YSS, there were more Anglophone never smokers who had never seriously thought about smoking (73%) as compared to Francophone never smokers who had never seriously thought about smoking (53%). There were more Francophone never smokers who had never seriously thought about smoking, residing outside of Quebec (73%) than Francophone never smokers who had never seriously thought about smoking, living in Quebec (52%). With respect to First Nations, there were less never smokers who had never seriously thought about smoking, among aboriginal students (51%) than smokers who had never seriously thought about smoking, among non-aboriginals (70%). In comparison to findings of surveys conducted about the same time among youth of similar age in Australia, England, Scotland, and the United States, Canadian youth in the 2002 YSS has the lowest rate of ever smokers, 26%, compared to 36%, 42%, 48%, and 41%, respectively. Compared to the 2000 US National Youth Tobacco Survey, tobacco use of all kinds among youth in Canada was less than that in the United States.

In keeping with the lower prevalence of all smoking rates among youth in the 2002 YSS, even fewer youth viewed smoking as a positive activity compared to youth in the 1994 YSS (Chapter 7). The percent of youth who considered smoking to be cool declined from 6% in 1994 to 3% in 2002. As in 1994, most of the youth who believed that smoking was cool were smokers. However, the 2002 finding that the percentage of youth who shared this belief remained unchanged across all grades was unexpected. In the 1994 YSS, there was an increase in this belief among youth in higher grades. While fewer youth in the 2002 YSS thought that smoking was cool compared to youth in the 1994 YSS, there was no difference in the perceived belief that youth start smoking because "smoking is cool" (45% vs 46%). However, in the 2002 YSS the perceived importance of each of peer pressure (64%) and curiosity (49%) was lower compared to the findings of the 1994 YSS (74% and 56%, respectively). Between 1994 and 2002, there was no change in the perceived influence of "popular kids" (45% and 46%, respectively), parent who smokes (31% and 32%, respectively) and sibling who smokes (27% and 26%, respectively). The stability in the importance of roles models as perceived reasons for smoking is an important finding for program planning.

One possible reason for the decline in smoking rates and changes in perception about smoking may be an increased awareness and understanding of the health risks associated with smoking (Chapter 8). While there was no difference in the proportions of youth in the 1994 and 2002 YSS who reported ever receiving education about smoking-related health problems (about three-quarters in both surveys), recall of specific diseases varied between the two surveys. While a smaller percentage of youth in 2002 than in 1994 reported lung cancer as a smoking-related health problem (49% and 56%. respectively), a greater percentage reported "other cancers" as an outcome (48% and 32%, respectively). The largest increase between 1994 and 2002 occurred with the reporting of "mouth problems" and "shortens lifespan", with both responses growing from about 3% to 18%.

Health warning messages which appear on cigarette packages play an important role in the education of youth, especially smokers. In the 2002 YSS, 73% of never smokers reported ever seeing health warning messages on cigarette packages, compared to 86% of puffers and 90% of those who smoked beyond puffing. Except for the last category, which remained stable between the two surveys, these percentages represent a growth from the 1994 YSS findings, when 65% of never smokers reported ever seeing health warning messages on cigarette packages, compared to 82% of puffers and 91% of those who smoked beyond puffing.

In addition to school-based programs and health warning messages health practitioners can play an important role in informing and advising youth about the consequences of tobacco use (Chapter 6). While nearly every respondent in the 2002 YSS had a regular family doctor (89%) and a regular family dentist (93%), only 17% of youth reported that their doctor ever asked them about tobacco product use and only 21% reported that their doctor ever talked about the health risks of using these products. Even fewer reported that their dentists had asked about tobacco product use and talked about the health risks (5% and 10%, respectively). Students of both sexes in the higher grades were more likely than students in the lower grades to report being asked about smoking by their doctor. For males, this percentage increased from 15% in grade 5 to 22% in grade 9, while for females, it increased from 8% to 30%. However, students of both sexes in the higher grades were less likely than students in the lower grades to report that they had been advised by their doctor about the health risks of using tobacco products. These findings indicate considerable potential for more involvement by these health professionals in preventing youth from starting to use tobacco products and promoting quitting among those who are already using these products.

In 2002, not only were fewer youth trying smoking, but fewer youth were purchasing cigarettes at retail. In addition, more youth reported being refused when trying to buy cigarettes (Chapter 9). In 2002, about 75% of Canadian youth reported that they usually obtained their cigarettes from social sources (family or friends), compared to 59% in 1994. Overall, a higher percentage of females relied upon social sources than males (80% and 68%, respectively). Older smokers and daily smokers, of both sexes, tended to be more reliant upon retail outlets than younger smokers. Of those who purchased cigarettes at retail, the corner store was the preferred venue. Of respondents who purchased cigarettes in a store about 53% reported ever being asked for their age, 44% reported ever being asked for identification, and 61% reported ever being refused the sale. This is compared to the 48% who were asked for identification and the 51% who were refused in 1994.

Despite the difficulty in purchasing cigarettes, 60% of youth in the 2002 YSS reported having a usual brand, down from 81% in the 1994 YSS. Of this group, 66% usually smoke a "regular" brand; 28% usually smoke a "light" or mild" brand and 6% usually smoke an "ultra" or "extra light" brand. The 2002 YSS also collected information on tar deliveries of the preferred brands. Almost 100% of youth reported that the tar delivery of their usual brand was 10 mg or greater. What this means is that youth are smoking cigarettes that are designed to deliver nicotine with little effort on the part of the smoker. In the 2002 YSS, data were not collected on the reasons given by youth for smoking other than "regular" brands.

While it is difficult to classify true quitting within this age group, the findings of the 2002 YSS indicate that 76% of daily smokers and 33% of smoked beyond puffing, not daily smokers have seriously thought about quitting at least once (Chapter 4). Of the youth within these two groups who had ever seriously thought about quitting and who made at least one quit attempt, 72% had actually tried to quit within the past six months. Overall, those youth who had ever seriously thought about quitting and who made at least one quit attempt had made an average of 3.2 lifetime quit attempts, with males making slightly more attempts than females (3.5 and 3.1, respectively). While, overall, 40% of youth reported quitting for longer than one month, only 17% of daily smokers who stopped smoking did so for longer than one month.

An important factor in encouraging and helping youth to quit and continue quitting should be school smoking restrictions, especially for the age group studied in the YSS (Chapter 10). The findings from the 2002 YSS indicate that 62% of students attended schools with a full ban on smoking, compared to 37% in the 1994 survey. In 2002, only 6% reported that there were no rules, compared to 25% in 1994. Reporting of restrictions is related to smoking status, with 66% of never smokers who had never seriously thought about smoking, reporting a full ban compared to 27% of daily smokers. The impact of these bans is seen on self-reported daily cigarette consumption. Those youth who reported a full ban and who smoked in last 30 days, reported smoking an average of 2.6 cigarettes per day compared to youth who reported a partial ban and who smoked in last 30 days, 5.2 cigarettes per day, and those who reported no rules and who smoked in last 30 days, 5.9 cigarettes per day. The impact of bans, both partial and full, was stronger in female than in male smokers.

While the 2002 YSS focussed mostly on cigarette use, the use of other forms of tobacco was also investigated (Chapter 3). Ever use of cigars or pipes was reported by 13% of the youth surveyed (11% for females and 15% for males); ever use of chewing tobacco was 2% (not reportable for females and 3% for males); ever use of snuff was reported by 2% (2% for females and 3% for males); and ever use of bidis was 3% (2% for females and 3% for males). Except for bidis, which were not reported in the 1994 YSS, the findings indicate significant declines in use of other tobacco products by Canadian youth.

Information on the prevalence of alcohol and other drug use was obtained for students in grades 7 through 9 (Chapter 11). The most commonly used substances were alcohol (54%), tobacco (31%) and marijuana (18%) (Chapter 11). However, 36% of males and 43% of females reported no lifetime use of alcohol, tobacco, cannabis, amphetamines, MDMA, hallucinogens, heroin, cocaine, steroids or inhalants. Of those who reported having used alcohol, 41% reported at least one heavy drinking episode. Smoking status was correlated with other substance use. For example, only 4% of never smokers reported marijuana use, compared to 67% of those who smoked beyond puffing.

The 2002 YSS provides considerable insight into the knowledge, attitudes and behaviour of Canadian youth with respect to tobacco product use and various factors that are related to such use. Each chapter provides extensive analyses of different aspects of youth smoking and its determinants. Such information is essential to policy makers, tobacco control program developers and researchers.

As with the findings of the 1994 YSS, the findings of the 2002 YSS are useful only if they are acted upon. The wealth of data collected in both surveys provides a basis for recommendations in a number of areas. Recommendations specific to various domains can be found in the findings chapters of this report. Priority recommendations for action that will affect future surveys, programs and policies are offered below.

> The findings underline the importance of a comprehensive, ecological approach to smoking reduction among youth so that the public health gains of recent years can be sustained and further progress can be made. An ambitious research agenda is required to inform and support tobacco control initiatives in legislation, regulation, policy, education, programming, and monitoring and surveillance
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> In general, the literature on the quit attempts, successful quitting, and the determinants of youth cessation is impeded by the lack of standardized measures of successful quitting. The development of valid and reliable questions to enable the identification of young smokers who are able to quit successfully is urgently needed.
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> The findings also suggest that there is a continuing need for comprehensive tobacco control interventions aimed at reducing youth exposure to smoking social models. Although youth reported being exposed to fewer friends and family members who smoke than was the case in the 1994 YSS, smoking social models continue to have a strong influence on youth smoking behaviour.

Both doctors and dentists need to be encouraged to speak to all youth about tobacco product use; youth-centered tools may need to be developed and disseminated to further assist health professionals in both prevention and cessation interventions.

The findings suggest that since 1994, youth beliefs and attitudes about the health risks associated with tobacco use have changed, and thus the education and message promotion provided to youth may need to be adapted accordingly. Many youth are successfully resisting smoking, having internalized messages from the past; however, in order to effectively communicate with the youth who now take up smoking, and overcome their resistance to current messages, we may have to alter messages and add new ones specific to changes in their beliefs that were identified.

The effectiveness of health warning messages may be enhanced if greater emphasis is placed on combining positive messages about the benefits of quitting smoking with current content relating to the negative impacts of tobacco use.

Banning point of sale displays, implementing product labelling legislation, increasing the number of smoke-free spaces, and further enforcement of restrictions on the sale of tobacco to minors will be important strategies for preventing tobacco product access and use among young people

Schools should be viewed as one element in a young person's environment that potentially affects smoking behaviour. More information is needed on the interaction of school variables with a host of other community, provincial and national factors that influence youth smoking patterns.

An innovative feature of the 2002 YSS was the measurement of substance use other than tobacco, such as alcohol and other illicit dugs. Tobacco is indeed a drug, and the co-occurrence of the use of various psychoactive substances is an important aspect of understanding drug-taking behaviour, including tobacco use.

Common definitions of youth smoking behaviour should be encouraged in national surveys employed by different countries. This would entail the use of common questions on the different surveys allowing for similar analysis and better comparisons across countries. It would also provide a basis for more definitive comparative evaluations of the impacts of various tobacco control measures on youth smoking.